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Intensive Narrative Intervention with Four Inner-City Children: An Interrupted Time Series

Analysis

by

Alyssa Rose

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Examining Committee

Phyllis Schneider, Speech Pathology and Audiology

Lu-Anne McFarlane, Speech Pathology and Audiology

Denyse Hayward, Elementary Education

Veronica Smith, Educational Psychology

Dedication

This document is dedicated to the most important people in my life: my fiancé, Kasey and my

parents Linda and Gary. Without their support, I could not have completed this process.

Acknowledgements

Abstract

This study investigated the effect of a two week intensive narrative intervention program on the narrative abilities of four inner-city children, using an interrupted time-series with removed treatment design. The intervention program focused on teaching five specific story grammar units. The variables of interest in this study were: improvement in story macrostructure, microstructure and language quantity, as well as improvement of scores on standardized narrative tools. All participants showed an improvement in at least one of the narrative skills examined in this study; one of four participants showed an improvement in all of the narrative skills examined in the study. The results of this study indicate that intensive narrative intervention is a viable treatment approach and should be further investigated.

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CHAPTER ONE

Introduction

A child is said to have a language impairment (LI) if he or she demonstrates a significant delay in the acquisition, use and comprehension of language, relative to environmental and norm-referenced expectations for children of a similar developmental level (Paul, 2007). Children with language impairments have difficulty in a variety of different aspects of language, including the production and comprehension of narratives (Schneider & Dubé, 2005).

Narratives are an integral part of day-to-day life: stories are told for enjoyment and to relate social occurrences, and are a focus during formal education. They predominate in childhood speech acts and are also an ecologically valid way to measure communicative competence (Botting, 2002). They are also the first form of language to require a child to produce an extended monologue and follow an expected format (Kaderavek et al., 2004). Stories provide the opportunity to test a child's proficiency in language content, form and use; narrative tasks can also be adjusted to increase or decrease difficulty, in order to determine the level of support a child needs in order to produce a good narrative (Hughes, McGillivray, & Schmidek, 1997). Narratives provide a viable and pragmatic approach to assess a pre-literate child's communicative skills.

The importance of narratives in the developing language of a child makes narratives a logical intervention target for children with language impairment. This study will examine the effectiveness of an intensive narrative intervention program for children with language impairment.

Literature Review

There is a large body of literature that documents the development of narrative ability for children who are developing typically (Botting, 2002); this literature provides a starting point to design a narrative intervention program.

Narrative Analysis

Methods have been developed to assess narrative structure and quality. Narratives can be analyzed at two different levels: examining either the macrostructure level or the microstructure level (Hughes, McGillivray, & Schmidek, 1997). Macrostructure analysis focuses on the overall organization of a story, and examines the causal and temporal relationships within a story (Hughes, McGillivray, & Schmidek, 1997). An example of macrostructure analysis is story grammar, an analysis that examines the inclusion of story grammar units, which are story elements. Obligatory elements that are required to tell a "good story" are the initiating event, the attempt and the consequence (Hughes, McGillivray, & Schmidek, 1997). An initiating event is an event that causes the protagonist to react in some way or initiates the goal-directed behaviour in the narrative. An attempt is the protagonist's attempt to reach his or her goal. A consequence or outcome is the resolution of the attempt. Thus, the main component of a "good story" is goal-directed behaviour. Other story grammar units include characters, setting, internal response (reaction of protagonist to initiating event), internal plan (the protagonist's plan about how he or she will deal with the initiating event) and reaction (how the character responds to the outcome). Although there are other methods of characterizing narrative development, story grammar has been used for clinical research and is recommended for this use (Schneider, Hayward & Vis Dube, 2006).

Structural sequences look at narratives based upon the presence of goal directed behaviour within the narrative. Structural sequences can be related to story grammar units – specific story sequences can be related to the presence of obligatory story grammar units (Hughes, McGillivray & Schmidek, 1997). Macrostructure analysis focuses on the overall content and structure of stories. Microstructure analysis looks at the smaller units within a narrative; it includes the study of cohesive markers, tense markers, content and syntactic complexity (Hughes, McGillivray & Schmidek, 1997).

Narrative analysis can also provide a framework within which a clinician can plan and implement narrative intervention. Intervention can focus on the macrostructure of the story, which targets the overall structure of the narrative produced by a child, the microstructure of the study, which are the more stylistic aspects of story-telling, or both.

Developmental Norms for Narrative Abilities

Hughes, McGillivray and Schmidek (1997) describe an adapted story structure sequence that is based upon Glenn and Stein (1980), Hedberg and Westby (1993), Liles (1987) and Peterson and McCabe (1983) which focuses on the macrostructure, or overall structure, of a narrative. The story structures that are presented in this sequence can be directly related to different story grammar units.

During the preschool years, children typically pass through three story structure levels: descriptive sequence, action sequence and reactive sequence. In a descriptive sequence, the child describes characters, the setting and/or habitual actions without specifying causal relationships – this sequence does not contain goal directed behaviour. A descriptive sequence would thus contain story grammar elements such as a setting or characters, but would be lacking obligatory elements such as initiating event, attempt or consequence. An action sequence contains

chronologically, but not causally, ordered actions. An action sequence also lacks obligatory story grammar units. A reactive sequence contains a series of actions that cause other actions, but with no explicit planning or goal-directed behaviour. Once again, this sort of sequence does not contain obligatory story elements (although actions caused by other actions could be considered rudimentary consequences), but does include elements such as characters and internal responses.

During the school years, narrative abilities continue to develop. At approximately age 6, children begin to provide the intentions of the characters in a narrative but do not yet explicitly state the character's plans – this is called an abbreviated episode. By age 7 or 8, children include planning in their narratives. Specifically, in an incomplete episode planning is present but the narrative lacks one or more key macrostructure components, such as a consequence. In a complete episode, which also is typically first produced around age 7 or 8, the characters' planning is included and the story contains all the necessary macrostructure components. Multiple episodes, also produced around age 7 or 8, contain a chain of reactive sequences, abbreviated episodes or a combination of complete and incomplete episodes.

At approximately age 11, complex episodes begin to be produced. These consist of complete episodes that include multiple plans, attempts or consequences within an episode and an obstacle to the attainment of a goal. Embedded episodes, in which a complete episode or reactive sequence is embedded within an episode, also develop around this time. Beyond age 11 or 12, interactive episodes develop which describe a set of events from two separate perspectives and have characters and goals influencing each other.

Hughes, McGillivray and Schmidek (1997) contend that story grammar analysis cannot be applied until the narratives produced by a child reach the level of abbreviated episodes, as

goal-directed behaviour is not present until this point. This would imply that intervention

focusing on story grammar would not be useful for children who were not telling stories at the

abbreviated episode level. However, in 2000, Hayward and Schneider developed and

implemented a narrative intervention for children between the ages of 4;8 and 6;4 with moderate

to severe expressive language impairment. The children in this study were selected because they

were not producing age-appropriate stories (i.e., they were not yet at the abbreviated episode

level). Hayward and Schneider targeted story grammar units that were not present in the

children's narratives in pre-testing. Post-testing indicated that the number of story grammar units

included in the children's narratives had increased. This indicates that story grammar

intervention can be effective for children at lower levels of story structure.

Narrative Abilities of Children with Language Impairment

A deficit in narrative ability not only impacts the scholastic achievement of the child with

language impairments, but also causes difficulties in all aspects of the child's life (Davies,

Shank, & Davies, 2004). The narratives produced by children with language impairments have

been judged, by laypersons and teachers alike, to be worse than those told by typically

developing children (Newman & McGregor, 2006). It has been suggested that children with

language impairments tell stories that are similar to those generated by younger, typically

developing children (Botting, 2002); for instance, children with language impairments use fewer

different types of cohesion devices in their narratives than do children of the same age without

language impairments (Liles, 1985 as cited by Schneider & Winship, 2002). Children with

language impairments also tell shorter stories than children without language impairments;

however, these stories contain proportionately more obligatory than optional elements (Hayward,

Gillam & Lien, 2007). This indicates that children with language impairments have poorer

narrative abilities than children who are typically developing, but are not completely lacking story knowledge. Preliterate children with poor narrative abilities have been found to self-evaluate their stories as good or very good, which suggests that children who have difficulty producing "good stories" may be unaware of their deficits (Kaderavek et al., 2004).

The language produced by children with language impairments during oral narrative tasks differs from the language they produce during conversations. Wagner et al. (2000) examined the discourse produced by 28 kindergarten-aged children with expressive language impairments in a conversational task, as well as in a story retell task and a picture-based oral narrative task. They found that MLU and use of grammatical morphemes was higher in the narrative tasks, whereas intelligibility and fluency measures were higher in the conversation task. The authors attributed these results to the higher processing demands required during the narrative tasks and suggested that narratives are useful in obtaining a language sample that demonstrates the upper bounds of a child's grammatical ability, as well as their mean length of utterance (Wagner et al., 2000). They also suggested that narratives are a more sensitive measure of fluency and intelligibility for preschool children with language impairments (Wagner et al., 2000).

Narrative Abilities and Academic Achievement

Many studies have found a relationship between story telling skill at a young age and academic achievement. Griffin et al. (2004) examined the relationship between oral discourse skills at age 5 and academic skills at age 8 in children with typically developing language. Utilizing both play narration tasks and picture description tasks, the researchers predicted the specific oral discourse skills at age 5 that were correlated with reading and writing abilities at age 8. Specifically, Griffin et al. found that textual evaluation and character states in play narratives,

as well as reporting of information in picture descriptions at age 5, were associated with reading comprehension at age 8; the ability to impose a plot structure on a play narrative and the use of conventional expository structure in the description of a picture were associated with performance on a written narrative at age 8.

O'Neill et al. (2004) examined the relationship between narrative ability in preschool years and academic skills two years later; MLU, vocabulary diversity, conjunctions, subordinate clauses, event content, perspective shift and mental state reference were the measures used in this study. Approximately two years later, the children (mean age of 6;2) were tested using the *Peabody Individualized Achievement Test – Revised* (*PIAT-R*) (Markwardt, 1998). The researchers found significant correlations between the narrative measures of conjunctions, event content, perspective-shift and mental state reference and the math subtest of the PIAT-R. The vocabulary diversity measure was also significant correlated with the reading recognition subtest. Therefore, a number of different studies have found a correlation between preliterate narrative skills and academic achievement for children with typical language development.

Fazio, Naremore and Connell (1996) contrasted story-retelling, rote memory and invented-morpheme learning against standardized tests to differentiate between children with specific language impairment and children with borderline language abilities living in poverty. The 34 children who participated in this study were followed from kindergarten through Grade 2. A norm-referenced test of language, The *Test of Oral Language Development – 2, Primary* (*TOLD-2P*) (Newcommer & Hammil, 1988), was also administered. The tasks and test were administered each year, with the tasks becoming progressively more difficult each year. The best kindergarten predictors of the need for academic remediation were the story-retelling task, which accounted for 21% of the variance in academic remediation, and the rote memory task,

which accounted for 16% of the variance. Furthermore, of the 15 children who received

academic remediation services, 13 failed the story-telling task in kindergarten.

Bishop and Adams conducted a study in 1990 that examined the language and literacy

skills of 88 8;6 year-olds who had been identified in a previous study as having language

impairments at 4 years of age. These children were tested at 4;6 and 5;6 and identified as having

either general cognitive delay (19) or specific language impairment (69). The children in the

original study and the follow-up study were assessed in the following areas: non-verbal ability,

receptive vocabulary, understanding of grammatical contrasts, general comprehension,

expressive phonology, expressive vocabulary, mean length of utterance, a narrative task

(Information Score from the Bus Story test), reading ability, spelling and tests of non-word

spelling and reading. This study found that syntactic ability and the proficiency at the narrative

task at ages 4;6 and 5;6 accounted for the majority of the variation in reading comprehension

ability, rather than phonological proficiency as they had predicted.

These studies demonstrate that there is a predictive relationship between preliterate

narrative abilities on one hand and academic achievement and reading ability on the other hand

during the elementary school years. Children who demonstrate poor narrative skills in the

preschool years often present with academic and reading comprehension difficulties once they

are in the formal education system. If these children could be identified early and receive

services focused on improving their narrative abilities, it is possible that some of their academic

and reading comprehension difficulties could be avoided.

Narrative Intervention

Based on the studies cited above that show that narratives can predict academic and

language skills, directly targeting narrative abilities in language intervention has the potential to

improve the narrative abilities of children with language impairments. However, whether

working on narratives will ultimately improve academic and language skills needs to be

explicitly demonstrated. In order to determine the effectiveness of narrative intervention for this

population, narrative intervention needs to be directly investigated.

Narrative intervention, a frequently recommended and used clinical tool, can be used to

target a variety of language skills. Narrative intervention can be used to specifically target the

categories of information that are required to tell a "good" story (Schneider, Hayward & Dubé,

2006), thus focusing on the narrative abilities of the participants. Despite the widespread use of

narratives in intervention there is little research to date that has examined its effectiveness.

Although a few recent studies have examined narrative intervention, these investigations have

taken place within a broader research focus that encompassed other intervention programs.

Hayward and Schneider (2000) implemented a story grammar intervention program for children

with moderate to severe language impairments (including comprehension, expressive syntax,

appropriate and effective use of language, verbal reasoning) aged 4;8 to 6;4 within the framework

of a narrative-based, language-focused preschool intervention program. Their intervention

included cue cards to identify story grammar components, story sequencing, reformulation of

scrambled stories and identification of missing story components. Pre- and post-testing was

performed and the analysis of single-subject data showed that 12 of 13 participants demonstrated

an improvement in the number of story units included in their post-test story productions.

However, it is difficult to determine whether the results were due to the story-grammar

component or to the preschool program, which also included narrative activities.

In 1987, Idol and Croll used an ABA design to investigate the effect of a story-mapping

intervention on the narrative abilities of 5 children between the ages of 9;5 and 12;11 who were

identified as having serious reading comprehension difficulties. In the pre-intervention

condition, the children read selected stories aloud and were then audio-taped while retelling the

story. Subsequently, the children were asked comprehension questions about the story that they

had read. In the intervention condition, the children were familiarized with a story map and the

interventionist provided explicit instruction on how to fill in the necessary components of the

story map; this instruction occurred over the first two days of intervention. For the remainder of

the intervention, the children were timed as they read the stories and completed the story maps,

and were then asked comprehension questions and participated in story retell. Once 80%

accuracy was obtained on these tasks, the children were moved into the maintenance phase,

where pre-intervention procedures were once again followed. The researchers were primarily

interested in whether the intervention improved story comprehension scores; however, they also

examined the impact of intervention on: number of words, clauses, and sentences; quality of

story retells; performance on two standardized reading tests, the *Stanford Diagnostic Reading*

Test (Karlsen, Madden, & Gardner, 1976) and the *Nelson Reading Skills Test* (Hanna, Schell, &

Schreiner, 1977); generalization probes; and a listening comprehension task. Four of the five

participants in the study showed an increase in story comprehension scores, as well as on the

standardized reading tests. Listening comprehension abilities increased for all five students. The

students also increased their inclusion of characters, story goal, story action, story problem

(except for one student) and story outcome elements in the story-retelling task. The results of

this study demonstrate that explicit instruction in story macrostructure (story map) can have

significant effects on the narrative abilities of children with poor narrative abilities.

Swanson et al. (2005) investigated the feasibility of a 6-week narrative-based language

intervention (NBLI) for second graders with specific language impairment, as an adjunct to an

auditory verbal-processing program. The NBLI targeted story retell, production and content

through story retell-imitation, story generation and repeated retellings at home. Outcome

measures of narrative ability were number of words and a summary measure of story

organization, content and language sophistication. Other measures of language ability, such as

developmental sentence score and sentence imitation, were tested to determine if other areas of

difficulty for children with language impairments improved in a narrative intervention paradigm.

Swanson et al. found that most (8/10) children exceeded the clinically significant improvement

criterion for Narrative Quality; however, the majority of children did not show improvement in

the other measures. The authors had hypothesized that number of different words would

improve, as they used it as a measure of narrative ability; although there was a slight increase in

the number of different words produced by the children, this did not reach a level of significance.

The authors attributed this finding to differing stories in the pre- and post-test measures, as well

as the children telling a story in the post-test, rather than treating it as a picture description task

as they had in the pre-test, possibly inflating their pretest novel word count; as the children

attempted to tell a story in the post-testing, their NDW scores decreased. The authors did not

expect the measures of language ability to change, as these were not directly targeted in the

intervention paradigm, and they did not. Nevertheless, the children in this study demonstrated an

increase in self-confidence related to narrative production skills and 2 of the participants were

able to recognize that stories produced by others were lacking story grammar elements; these

participants were excited to tell the researchers about these instances, and thus appeared to have

learned and generalized the skill.

Cable (2007) investigated the effectiveness of a narrative intervention program for

second grade students who had difficulty with oral narrative production, but were not necessarily

diagnosed as having language impairment; 18 children participated in the intervention group and

18 children acted as the control group and received no intervention. The intervention took place

over an 8-week period and the children in the experimental group participated in 22 30-minute

sessions within this time period. Participants in both groups participated in pre- and post-testing,

and were administered the *Test of Narrative Language (TNL)* and oral vocabulary and sentence

imitation subtests of the *Test of Language Development Primary, Third Edition* (*TOLD-P3*).

They also participated in a researcher-designed, criterion-referenced vocabulary test during pre-

and post-testing. Pre-treatment testing indicated that there were no significant differences

between the experimental and control groups on either the oral narration subtest or the narrative

comprehension subtest, but significant differences were apparent for the target word vocabulary

test, with the experimental group performing better. The intervention focused on both

macrostructure and microstructure instruction. Specifically, macrostructure instruction focused

on teaching the children about story grammar units and was supplemented by models and visual

aids. Elements related to perceived story quality, such as character names and clear endings,

were also targeted during macrostructure analysis. The children were first asked to identify these

elements in story books; they were subsequently asked to write their own stories and identify

whether necessary elements were present or absent. Microstructure elements were targeted

through peer monitoring and contrasting appropriate and inappropriate uses. Post-treatment

results indicated that the experimental group improved in oral narrative ability, as measured by

the *Test of Narrative Language* (*TNL)* (Gillam & Pearson, 2004), and in vocabulary scores, when

compared to the control group. No significant improvement was found in narrative

comprehension abilities, as measured by the TNL, for the experimental group; the author

suggested that this finding could be accounted for by the short treatment time, the complexity of

the story comprehension task or the focus on narrative production during intervention. Post-

treatment analysis also indicated that the length and complexity of narratives produced by the

experimental group were significantly higher than those of the control group. These results

indicate that explicit instruction regarding narrative macrostructure and microstructure can

improve the oral narrative abilities of children with poor narrative abilities.

A recent study (Westerveld & Gillon, 2008) investigated the impact of an oral narrative

intervention program on the oral narrative production and comprehension skills, as well as

reading comprehension skills, of 10 school-aged children with mixed reading disabilities

(defined as difficulty in both decoding/word recognition and in comprehension). The control

group consisted of 10 age, gender and ethnicity matched peers who were identified as typically

developing. Pre- and post-treatment measures of reading ability, measured by the *Neale Analysis*

*of Reading Ability (*Neale, 1999), oral narrative production abilities as measured by

microstructure abilities (number of different words, number of mazes and grammatical

complexity) and macrostructure abilities (story quality rubric), and oral narrative comprehension

(story comprehension probes) were administered to the experimental and control groups.

Intervention took place over a 6-week period and consisted of 12 one-hour small group sessions;

it focused on introducing seven story grammar elements and used stories as a basis for story

grammar element identification and elaboration. Analysis indicated that the participants showed

statistically significant improvement in oral narrative comprehension abilities, but not in oral

narrative production abilities or reading comprehension abilities.   However, it is not surprising

that reading comprehension did not improve for this group, as the children had difficulty with

decoding as well as listening comprehension and decoding abilities were not targeted. The

researchers noted that the oral narrative production abilities of the experimental group did

approximate those of the control group of typically developing children during post-testing; they also noted the need for further investigation of their measure of oral narrative production abilities, as they used a story quality rubric which may not have captured change. This study, however, demonstrated the effectiveness of a narrative intervention program on the oral narrative comprehension abilities of children with mixed reading disabilities.

The reviewed narrative intervention studies show an interesting pattern of results, with one investigation (Cable, 2007) showing improvement in story production scores but not in narrative comprehension scores, whereas another (Westerveld & Gillon, 2008) found an improvement in narrative comprehension scores, but not in story production scores. Yet another study (Idol & Croll, 1987) found an improvement in both. This discrepancy could be accounted for by differing foci during intervention, different outcome measures used in the different studies and the different age groups targeted by the studies. Nonetheless, it appears that narrative intervention is able to improve both story production abilities and story comprehension abilities for children with LI.

Intensive Intervention

Narrative intervention is not typically conducted in an intensive fashion, but other areas of intervention have shown promising results when implemented intensively. Torgesen et al. (2001) conducted a study examining the effectiveness of two intensive phonological awareness programs for children with identified learning disabilities. The students were tested prior to intervention, post-intervention, and at 1 and 2 year follow-up periods. Students in both conditions showed improvement on 10 separate measures of language at the post-intervention, as well as at the 1 and 2 year follow-up periods. The authors concluded that, as the children in this

study made large and sustainable gains in reading ability, intensive intervention is a viable

approach and should be investigated further.

Gillam et al. (2008) compared *Fast For Word Language (FFW-L) (*Scientific Learning

Corporation, 1998), a computer program designed to improve phonological awareness skills, to

three other methods of intensive intervention: a computer-assisted language intervention, which

targeted skills similar to those targeted by FFW-L; academic enrichment, which involved

children playing computer games aimed at academic abilities rather than language skills; and

individual language intervention, where children received one-on-one services. The children

involved in this study were between the ages of 6 and 9 and were identified as having language

impairments. Children in all conditions received treatment for 1 hour and 40 minutes per day, 5

days a week, over a 6 week period. Children were tested with a battery of language, literacy and

auditory processing tests prior to treatment, immediately after treatment, and 3 and 6 weeks after

treatment. All children in the study showed a significant improvement on the *Comprehensive

Assessment of Spoken Language* (*CASL*) (Carrow-Woolfolk, 1999), a standardized measure of

expressive and receptive language. Furthermore, there was no significant difference in the

amount of improvement between the four groups, including the one intended to serve as a

control, and the effect size for all conditions were found to be moderate to large. Since the

programs were quite different apart from their intensity, it could be argued that the intensive

nature of the programming may have been the feature responsible for improvements.

The reviewed literature shows that children with language impairments who demonstrate

difficulties with narratives may be at risk for later academic and reading difficulties, narrative

intervention improves the narrative quality of stories told by children with language impairments

and intensive intervention appears to have positive and long-lasting effects on the language skills

of children with language impairments. Additionally, narratives are an important component of children's day-to-day lives (Davies, Shank, & Davies, 2004). It is reasonable to assume, then, that an intensive narrative intervention program aimed at early elementary school children with language impairment could have a positive and lasting effect on the narrative abilities of these children; one could posit that such an intervention could reduce the risk of these children developing academic and reading difficulties during school.

An intensive narrative intervention program for school-age children with language impairments was run in Airdrie, AB in the summers of 1998 and 1999 (Theresa Chapman, personal communication, 1999). The children in the program participated in 3 hours of programming a day, for 10 days; the program targeted inclusion of story grammar units and included explicit teaching about story grammar, story retell tasks, personal narratives, dramatization of familiar stories and parallel story tasks. The children underwent pre-testing to determine pre-intervention levels of narrative abilities and general language abilities. Post-testing demonstrated that the children who participated in the intensive narrative intervention paradigm showed improvement in the measures of narrative ability, as well as measures of general language proficiency. This program demonstrates that intensive narrative intervention programs have the potential to increase the narrative abilities of children with language impairments who demonstrate difficulties in narrative ability.

Previous research studies that examined the effectiveness of either narrative or intensive intervention focused on older school-aged children with LI. However, it would also be appropriate to target narrative skills and in an intensive fashion during the early school years. Stories are included in the curriculum of kindergarten and Grade 1 classroom. Narrative skills continue to develop within the early school years, thus making it an appropriate target for this

age group. For many children of this age, stories are a large part of their day-to-day lives, both at

home and at school; targeting narrative skills could therefore enhance the enjoyment and

understanding of their day-to-day activities and allow them to participate more fully. Finally,

intensively targeting language and narrative skills may strengthen these abilities, helping to

enhance performance for children in kindergarten or Grade 1.

This Study

This study examined the effect of a group administered intensive narrative intervention

program on the narrative and language production abilities of early school aged children with

language impairments.

The research questions examined in this study are:

1. For each child, was there evidence of improvement on the following measures in probe

    stories administered at 3 points during the intervention and 4 points after the intervention:

    a. Story Grammar, a macrostructure analysis,

    b. First Mentions, a microstructure analysis,

    c. Number of words, a language quantity measure?

2. For each child, was there evidence of improvement on two standardized tests of

    narratives administered before and after treatment:

    a. The *Edmonton Narrative Norms Instrument* (ENNI),

    b. The *Test of Narrative Language* (TNL)?

This study is intended to be exploratory to analyze the impact of a group, intensive

narrative intervention program on the narrative abilities of school-aged children who show

narrative deficits, as determined by pre-intervention testing. If the children in this study show a

significant improvement in number of story grammar units included, inclusion of characters and

an increase in the length of their stories, then group intensive narrative intervention should be examined further. Additionally, if the participants in this study showed an increase in their scores on either the ENNI or the TNL, two standardized tests used clinically to determine narrative abilities, these results will further demonstrate the effectiveness of a group intensive narrative intervention program and warrant further investigation.

CHAPTER TWO

Methods

Participants

The participants were recruited through the Kindergarten Inclusive Developmental

Services (K.I.D.S.), a program within the Edmonton Public School Board. The speech-language

pathologist in the program identified 12 children within an inner-city school between the ages of

5;0 to 6;11 with a moderate to severe expressive language delay, no suspected cognitive delay,

no suspected hearing impairment and mild to moderate phonological delay or receptive language

delay. Consent forms were sent to the parents of all children identified and 9 consent forms were

returned. One child was excluded because her parents did not give permission for audio- or

video recording.   The 8 remaining children participated in pre-treatment testing to determine if

they demonstrated impaired narrative abilities. Two children were excluded from the

intervention because they missed one or more pre-intervention testing sessions, therefore their

narrative abilities could not be sufficiently assessed. One child was excluded because he scored

within the expected range for his age on both the ENNI and the TNL. Five children were selected

to participate in the intensive narrative intervention group; however, one child was removed from

the intervention due to behavioural difficulties leaving four participants.

All children demonstrated impaired narrative abilities, as defined by scoring at least one

standard deviation below the norm on either the ENNI or the TNL. Descriptions below of the

individual participants' language abilities are based on information provided to the researcher by

the speech-language pathologist at K.I.D.S.

Participant 1 was a male Grade 1 student, aged 6;8. He presented with low average

receptive language skills with specific difficulties in processing orally presented information.

His expressive language skills were mildly delayed. Participant 1 demonstrated some behavioural difficulties in the intervention group, but he was readily redirected to participate in testing and intervention tasks. Pre-treatment testing indicated that Participant 1was more than one standard deviation below the mean on the Oral Narration and Narrative Comprehension components of the TNL, as well as on the Narrative Language Ability Index, resulting in his inclusion in the study.

Participant 2 was a male kindergarten student, aged 5;9. He presented with average receptive language skills, moderate expressive language delays and a severe phonological delay. Participant 2 scored more than one standard deviation below the mean on ENNI A1 and on the Oral Narration component of the TNL, resulting in his inclusion in the study. Participant 2 readily participated in treatment activities and persisted when his message was not understood due to phonological errors. However, in testing situations he often refused to tell stories that he had already seen (such as the ENNI and TNL stories), as well as picture scene stories containing the same characters (such as Hippo Fruit and Hippo Museum). On occasion, he could not be convinced to produce these stories.

Participant 3 was a male kindergarten student, aged 5;5. He presented with a moderate receptive and moderate – severe expressive language delay, as well as a moderate phonological delay. Participant 3 scored one standard deviation below the mean and on ENNI A3, resulting in his inclusion in the study. Participant 3 readily participated in both treatment and in testing situations.

Participant 4 was removed from the intervention due to behavioural issues. He presented with low average receptive and expressive language skills with specific difficulties with some

grammatical elements and with following lengthy directions. He also presented with a mild

phonological delay. No data will be reported for Participant 4.

Participant 5 was a female kindergarten student, aged 5;9. She presented with low

average receptive language skills and moderate expressive language delay. She also presented

with a moderate phonological delay. Participant 5 scored one standard deviation below the mean

on the Oral Narration and Narrative Comprehension components on the TNL, resulting in her

inclusion in the study. Participant 5 readily participated in both treatment and testing situations.

Setting

The intervention took place over a 2 week period in March, 2009 at Norwood Elementary

School, in Edmonton, Alberta. The intervention took place in the afternoon, with the duration

being 1 hour and 55 minutes on every day except for Thursday. Due to early dismissal, the

duration of the intervention on Thursdays was 1 hour and 5 minutes. The time spent in the

intervention totaled: 17 hours and 30 minutes.   Each child in the intervention was removed from

his or her classroom and brought into the intervention room.

Procedure

To examine participants' narrative skills, use of story grammar units (macrostructure),

introduction of characters into stories (microstructure) and story length (language quantity) were

analyzed and scores on standardized narrative assessment tools were determined. There were

multiple observations over time (i.e., prior to, during, and after the intervention) to determine if

the applied treatment was effective; an interrupted time series with removed treatment design

was used as measurements were taken after treatment was discontinued (Cook & Campbell,

1979). This allowed for an opportunity to determine if narrative abilities, as assessed through

micro- and macrostructure analysis, as well as language quantity abilities, improved.

Dependent Measures

The assessment materials used in this study included: the *Edmonton Narrative Norms Instrument* (ENNI) (Schneider, Dubé, & Hayward, 2004), the *Test of Narrative Language* (TNL) (Gillam & Pearson, 2004), select story episodes from Mercer Meyer's *Achoo!, Hippo* and *Hiccup!* wordless story books, 4 unpublished picture sets drawn to illustrate single-episode story from Kajner & Klein, (2002) and the B1 and B2 stories from the ENNI, which currently are not scored for story grammar during standardized administration of this test. The standardized tests were used to provide normative information on story skills. The picture sets were used as probes to assess pre-intervention skills and to track the skills during and after intervention; ENNI stories A1 and the TNL Late for School story were also used as probes. The large set of stories was used to eliminate practice effect for stories, as the children would only see each story once (except for the ENNI and TNL Late for School stories).

Edmonton Narrative Norms Instrument (ENNI). The Edmonton Narrative Norms Instrument (ENNI) (Schneider, Dubé, & Hayward, 2004) was used for pre-, post-, and post-post treatment testing. It was selected because it is a standardized test used to examine the story grammar units a child includes in his/her story, as well as first mentions. Raw scores, standard scores, number of story grammar units, first mentions and total number of words were the measures derived from this assessment tool.

Test of Narrative Language (TNL) (Gillam & Pearson, 2004). The TNL was also used for pre-, post- and post-post treatment testing. It was selected because it is a standardized test used to determine narrative abilities and has previously been used in a research capacity (Cable, 2007). The TNL provided test scores for oral narration and narrative comprehension; both raw and standard scores were reported for this tool.

Wordless Picture Books. Wordless stories were used for pre-, during, post- and post-post treatment testing. The Mercer Meyer stories, unpublished picture sets and B-stories from the ENNI were used as a means to examine inclusion of story grammar units, first mentions and total number of words, the three main variables of interest in this study, in addition to the ENNI and the TNL. The researcher elected to use these stories in addition to the assessment materials primarily as a means of collecting during-treatment testing data. All of the stories used as assessment materials were selected because they were wordless and because they contained all necessary story grammar units; therefore, they were specifically chosen as a means of examining the three main variables of interest across assessment times. The researcher elected to use wordless picture stories as opposed to story re-tell to eliminate the confounding factor of memory – stories produced from wordless picture books do not require the children to retain information in memory and then repeat it. Furthermore, pictures require the child to identify the story elements and put them into words, whereas story retell provides the story structure and content that children only need to repeat. Therefore, wordless picture books provide a framework from which children must produce their own narratives.

One story was used in both assessment and treatment, the Hiccup Paddle story. It was used in treatment once all of the children had completed the assessment phase. Once used in treatment, it was not re-used in the assessment phase. None of the remaining standardized tests or stories were used as materials during the intervention itself.

Pre-Treatment Testing. All pre-treatment testing sessions were audio-recorded. The pre-testing was completed by a trained research assistant. The children were randomly assigned to one of two groups (A or B) as a means of counterbalancing the wordless stories administered; the stories were administered in a different order for each group. The ENNI and the TNL were

administered on the same days for both groups. Pre-testing occurred on three days and testing

days were separated by 2 to 3 days. The testing took between 10 and 35 minutes, depending

upon the day and the tests administered. The standardized tests and stories administered, as well

as testing order are listed in the table below and occurred in the two weeks prior to treatment.

Table 1

Pre-Treatment Testing Order

Testing Days	Group A	Group B
Pre-Treatment Day 1	ENNI Training, ENNI A1, ENNI A2, ENNI A3	ENNI Training, ENNI A1, ENNI A2, ENNI A3
Pre-Treatment Day 2	TNL, Hippo Train	TNL, Hippo Fruit
Pre-Treatment Day 3	Hiccup Water, Bound B, Hippo Museum, Achoo Hippo	Hiccup Push, Bound B, Hippo Glass, Achoo Hippo

Note. Bound B = unpublished picture set developed for a previous research study (Kajner, R., &

Klijn, J., 2002), ENNI = Edmonton Narrative Norms Instrument, TNL = Test of Narrative

Language

The ENNI and the TNL were administered according to their standardized procedures.

They were administered for two reasons: firstly, to determine whether the participants showed

impairments in their narrative ability; and secondly, to determine pre-intervention raw scores for

the participants. The stories from wordless pictures were elicited using the standardized

administration from the Edmonton Narrative Norms Instrument. The dialogue used during

administration is as follows: "I have some pictures that tell a story. First I'll show you all the

pictures and we'll go back to the beginning of the story, and then I want you to look at the

pictures and tell me the story that you see in the pictures. I won't be able to see the pictures so

you need to tell me the story really well so I can understand it. Okay?" If the child does not start

telling the story, the administrator is allowed to prompt them to tell a story by saying "How

would you start your story?" If the child cannot get started, the administrator is able to say "Let's

try the next page." The stories were administered to determine pre-intervention measures of

inclusion of story grammar units, first mentions and total number of words.

     During-Treatment Testing. During-treatment testing was conducted on Day 3, 6 and 10

of the intervention. All testing sessions were audiorecorded. During-treatment testing was used

to determine inclusion of story grammar units, first mentions and total number of words. The

stories were administered by the researcher's supervisor. The stories administered are included in

the table below.

Table 2

During-Treatment Testing Order

Testing Days	Group A	Group B
During Treatment Day 1	Achoo Jail, Bound D	Hiccup Boo, B1
During Treatment Day 2	Hiccup Paddle, B2	Hiccup Paddle, B2
During Treatment Day 3	Hiccup Boo, B1	Achoo Jail, Bound D

Note. B1 = ENNI B1, B2 = Edmonton Narrative Norms Instrument B2, Bound D = unpublished

picture set developed for a previous research study (Kajner, R., & Klijn, J., 2002).

     Post-Treatment Testing. Post-treatment testing was conducted over two sessions in the

two weeks following the completion of the intervention. All sessions were audiorecorded. All

standardized tests and stories were administered by a trained research assistant. The

standardized tests were re-administered to determine if intensive narrative intervention increased

raw scores. The stories (including the ENNI B3 story) were re-administered to determine if

intensive narrative intervention increased the inclusion of story grammar units, first mentions and total number of words. The standardized tests and stories administered are listed in the table below.

Table 3

Post-Treatment Testing Order

Testing Days	Group A	Group B
Post Day 1	ENNI A1, ENNI A2, ENNI A3, ENNI B3	ENNI A1, ENNI A2, ENNI A3, ENNI B3
Post Day 2	TNL, Bound C	TNL, Bound A

Note. Bound A and C = unpublished picture sets developed for a previous research study (Kajner, R., & Klijn, J., 2002), ENNI = Edmonton Narrative Norms Instrument, TNL = Test of Narrative Language

   Post-Post Treatment Testing. Post-post-treatment testing was conducted four weeks following the completion of the intervention. All sessions were audiorecorded. All standardized tests and stories were administered by a trained research assistant. The standardized tests were re-administered to determine if intensive narrative intervention increased raw scores and if these gains were maintained one month after treatment was completed. The stories (including the ENNI B3 story) were re-administered to determine if intensive narrative intervention increased the inclusion of story grammar units, first mentions and total number of words and if these gains were maintained one month after treatment was completed. The standardized tests and stories administered are listed in the table below. The same wordless stories were administered in post- and post-post treatment testing due to researcher error; these stories were supposed to be counter-

balanced in post- and post-post treatment testing (i.e. one group received Bound A in post- and

Bound C in post-post).

Table 4

Post-Post Treatment Testing Order

Testing Days	Group A	Group B
Post Day 1	ENNI A1, ENNI A2, ENNI A3, ENNI B3	ENNI A1, ENNI A2, ENNI A3, ENNI B3
Post Day 2	TNL, Bound C	TNL, Bound A

Note. Bound A and C = unpublished picture sets developed for a previous research study

(Kajner, R., & Klijn, J., 2002), ENNI = Edmonton Narrative Norms Instrument, TNL = Test of

Narrative Language

Intervention

Treatment Materials. The treatment materials used throughout the intervention were

selected specifically to target comprehension, identification and production of story grammar

units. Three stories were selected as a focus during the intervention: "*Good Dog, Carl!," "Carl*

Goes Shopping," and "*Carl Goes to Daycare*" by Alexandra Day and were used solely during the

intervention. One story was used per day, as the beginning and ending activity for each day of

intervention, during story-time. The stories were used to target comprehension and identification

of story grammar units, as well as a teaching tool for cause and effect. Towards the end of the

intervention, these stories were used to target production of story grammar units in the context of

a familiar story.

Story grammar markers were used throughout the intervention as a visual cue to help

with comprehension, identification and production of the story grammar units targeted in the

intervention. The markers can be found in Appendix A. Each child was provided with a copy of

these pictures, had the opportunity to make their own story grammar set using these pictures and

took his or her set home at the end of the intervention.

Additional materials used in treatment to target identification of story grammar units

included: books that were present in the classroom were used intermittently to target

identification of story grammar units; short oral stories containing and lacking problems, which

were not recorded by the researcher; and Hiccup Paddle, an excerpt from Mercer Meyer's

Hiccup story, was used to target identification of story grammar units. It was only used as a

treatment tool after it had been administered to all children and once used in treatment, it was not

used again as an assessment tool;

Materials used to target the comprehension and identification of story grammar units

included: scenes from Mercer Meyer's *A Boy, A Dog and A Frog* story, as well as *Frog, Where

are you?* Materials used to target identification and production of story grammar units included

story starters (Appendix B) and story elements (Appendix C).

Treatment Procedure

Guiding Principles. The narrative intervention used was designed around 3 main guiding

principles. The principles are based on the program *Dynamic Assessment and Intervention:

Improving Children's Narrative Abilities* by Miller, Gillam and Pena (2001). The first principle

is to focus on teaching about specific story grammar units, as well as planning and goal-directed

behaviour. Each child in the Miller, et al. (2001) program was provided with daily one-on-one

time with the researcher to facilitate scaffolding during narrative production. In the current

study, five story grammar elements were selected as a focus for the entire group, based upon the

performance of the group in pre-intervention testing: they included characters, settings, initiating

event, attempt and outcome. One-on-one time was provided periodically in which each child

worked with a member of the intervention team, which allowed opportunities to focus on

individual child needs.

The second principle refers to the selection of narrative genres, with Miller, et al.

recommending that two factors should be considered: the interests of the child and the

characteristics unique to the narrative genre. The stories used in this intervention were selected

based on inclusion of story grammar units and age-appropriate themes (animals). This was an

essential component of the intervention – three stories were selected as the focus of the

intervention that were simple, were developmentally appropriate and contained the all necessary

story grammar units.

Lastly, Miller, et al. indicate that during the intervention itself, the child should be

responded to in a contingent fashion. Although during the current study the researcher started

most activities with teaching, the specific direction of the activity was based upon the

participants' responses.

An additional guiding principle of the present intervention was to move the children from

the comprehension of story grammar elements to the identification, and possibly the production,

of the story grammar units targeted in the intervention. Thus, the intervention began by teaching

character, setting, initiating event, attempt and outcome; the participants were expected to learn

to identify each element and then to produce them independently in their narratives. This cycle

was repeated three times over the course of the two week period as each new story was

introduced.

The final guiding principle of the intervention was to ensure that it was a unique and

structured narrative intervention that the children would not receive in other contexts. Although

the intervention was based upon narratives, with dramatic play, games and other physical

activities built in, it was unlike a typical school experience, as these activities were focused

solely on developing narrative abilities. The children who participated in this intervention

received structured and focused instruction about specific story grammar units. They were asked

to identify these story grammar units in the three stories used throughout the intervention. Each

of the activities within the intervention program focused on a component of narrative skills; the

focus of different activities included identifying story grammar units, producing stories with

necessary story grammar units, brainstorming for story parts and acting out the stories that the

participants had created. The children who participated in this study had previously been exposed

to stories in a school setting; however, they had not developed age-appropriate narrative skills.

Thus, an intervention that focused on direct instruction of narrative structure was felt to be of

benefit for these students, in order to improve their narrative skills.

  Program Focus. The intensive narrative intervention program focused on teaching five

story grammar units: character, setting, initiating event, attempt and outcome. They were

selected because during pre-testing, the children omitted at least one of these units in each of the

stories that they produced. These are listed for each child in the results section. Therefore, the

treatment objectives included increasing the participants' comprehension, identification and

production of the following story grammar units: character, setting, initiating event, attempt and

outcome. All treatment activities were designed to target these objectives.

The story grammar units targeted in the intervention were cycled to ensure that the children were

exposed to each story grammar unit on numerous occasions. The first two days of intervention

focused on developing the children's comprehension of the 5 story grammar units; most

activities focused on comprehension and identification of story grammar units. On day 3, once

the children had demonstrated a comprehension of the 5 story grammar units, the focus of the intervention changed primarily to identification and production of story grammar units. However, the remaining days of the intervention did include activities focused on comprehension when one or more children showed difficulties identifying and producing select story grammar markers; the decision to continue with comprehension activities was based on the third guiding principle, that the children should be responded to in a contingent fashion.

Table 5

Story Grammar Units Selected as Focus for Each Day

Day	The Story Grammar Units Selected as a Focus for this Day
Day 1	Characters, Setting (Comprehension)
Day 2	Initiating Event, Attempt, Outcome (Comprehension)
Day 3	Characters, Setting (Identification & Production)
Day 4	Initiating Event (Identification & Production)
Day 5	Production of all 5 story grammar units
Day 6	Attempts
Day 7	Outcomes
Day 8	Attempts and Outcomes
Day 9	Production of all 5 story grammar units
Day 10	Production of all 5 story grammar units

 Each day of the intervention, the children were provided exposure to all 5 story grammar units and the opportunity to produce all 5 story grammar units in their own stories. A complete version of the intervention plan, including treatment activities and goals, is listed in Appendix D.

Activities and Goals. In treatment sessions, the participants engaged in a variety of preschool activities such as story-time, crafts, story-telling, drawing pictures, group games, dramatic play, barrier games and story completion tasks.   These activities were designed to target the following goals:

1) The child will associate each story grammar element with its associated marker by providing the correct story grammar element name.

2) The child will correctly order the story grammar markers.

3) The child will identify each story grammar unit when presented with a wordless picture story with:

   a.   a visual cue (marker)

   b.   Without visual cue

4) The child will produce a novel story containing all targeted story grammar elements with:

   a.   A visual cue

   b.   No visual cue

5) The child will correctly identify a missing story grammar element in an orally presented story with:

   a.   A visual cue

   b.   No visual cue

6) The child will produce a specific story grammar unit in the context of a treatment activity with:

   a.   A visual cue

   b.   No visual cue.

7) The child will increase his or her understanding of a story grammar unit, through exposure to:

    a. Story grammar markers

    b. Wordless picture books

8) The child will produce a story containing all story grammar units using a wordless picture story with:

    a. A visual cue

    b. No visual cue.

A complete lesson plan describing activities and their corresponding goals can be found in Appendix D.

     Each day began with story time, where one of Alexandra Carl's Good Dog Carl stories was read to the participants.   The activity that occurred immediately after story time focused on teaching about story grammar units, and as the participants' comprehension of story grammar units increased, identification of story grammar units. This review occurred on a daily basis, allowing for a daily review of all of the story grammar units targeted in the intervention. The remaining activities for the day focused on one or two story grammar units. Each day of the intervention ended with story-time, where one of the Good Dog Carl stories was re-read to the participants. As the participants' narrative abilities increased throughout the intervention, the children were provided with the opportunity to "be the teacher" and read their choice of the Good Dog Carl stories to the rest of the group.

    Attendance. Three of the four children who participated in the narrative intervention missed one or more days of the program. Participant absences are detailed in the table below.

Table 6

Participant Absences

Participant	Number of Days Missed	Percentage of Intervention Missed	Focus of Days Missed
Participant 1	1	11%	Attempts
Participant 2	2 (early dismissal days)	12%	Initiating Events and Production of all 5 Story Grammar Units
Participant 3	3	28%	Attempts, Outcomes (2 Days) and Production of all 5 Story Grammar Units
Participant 5	0	0	N/A

All of the story grammar elements that the participants missed were also targeted on other days the participants were present.

Analysis

Macrostructure of narratives was examined by looking at inclusion of story grammar units, determined by looking at the percentage of story grammar units that the participants correctly include in their story. Macrostructure analysis also included examining whether the participants increased their inclusion of story grammar units (targeted in the intervention) throughout the treatment and post and post-post treatment testing conditions.

Raw and standard scores on the ENNI were compared after pre-, post-, and post-post treatment testing to determine if scores on this standardized test increase due to intensive

narrative intervention. Oral narration and narrative comprehension scores were examined in pre-
, post-, and post-post treatment conditions to determine if narrative intervention results in an
increase in scores on this standardized test.

Inclusion of first mentions was examined as a mean of examining improvement in
microstructure, which has been examined in previous research. Specifically, the analysis looked
at the percentage of total possible points for characters introduced into each story that the child
tells in testing conditions; this is based on the ENNI measure First Mentions.

Total number of words was examined for stories the participants tell during testing.
Specifically, the total number of words for each story was determined, added together, and
divided by the number of stories told per participant within a session. This determined whether
story length increases as a result of intensive narrative intervention.

CHAPTER THREE

Results

Statistical Design

This study employed an interrupted time series analysis with removed treatment to examine the effect of intensive narrative intervention on the individual participants' inclusion of story grammar units, first mentions and total number of words. This analysis was repeated for each participant. Interrupted time series analyses are used when there are multiple observations over time to determine if a treatment was effective; an interrupted time series with removed treatment was used because measurements were taken after treatment was discontinued (Cook & Campbell, 1979). A visual display was used to investigate the patterns of data for each participant across the pre-intervention, treatment, post- and post-post treatment conditions. Inclusion of story grammar units, first mentions and total number of words was examined using this method. Following the analysis methods employed by Hayward and Schneider (2000), this study applied a modified standard deviation test of significance to the pre-intervention data for each participant. Thus, if at least two consecutive points after the pre-intervention phase occur above the one standard deviation band, changes from pre-intervention to intervention were considered as significant (Portney & Watkins, 2003). This test was included to provide an objective basis for determining change due to the intervention rather than relying solely on visual inspection of the data.

The main variable of interest in this study was whether intensive narrative intervention increased story grammar units, first mentions and total number of words in the children's stories. The scoring conventions for story grammar units from the ENNI were used: the initiating event, attempt and outcome were given a score of 2 and all other story grammar units were assigned a

score of 1 as per the ENNI conventions. Inclusion of story grammar units was calculated by dividing the participant's overall story grammar score per day, divided by the total possible score for the day, to provide a percentage of story grammar units included.

Story grammar units were also examined by looking at whether the number of story grammar units targeted in the intervention increased over the intervention period. Specifically, each individual participant's production of these units was examined over the pre, during, post and post-post treatment conditions to see if the number of story grammar units increased due to the intervention.

The first mentions scoring conventions from the ENNI were used to calculate inclusion of first mentions. As with story grammar units, inclusion of first mentions was calculated by dividing the participant's overall first mentions score per day, divided by the total possible score for the day, to provide a percentage of first mentions units included.

Determining if the children showed an increase in total number of words was also a focus in this study. Words in mazes (false starts, repeated words, etc.) were excluded and both of the words in contractions (e.g. don't was counted as two words, do not) were included in this calculation. Mean total number of words was calculated to account for the varying story length of the story used during testing. For each testing day, the total number of words for each story were added together and divided by the number of stories used that day to provide the mean total number of words for that day.

Raw and standard scores on the ENNI and the TNL were examined across all testing conditions to determine if the children showed an increase in test scores due to the intensive narrative intervention program.

Treatment Fidelity

Treatment fidelity was evaluated through the use of structured lesson plans and adherence to the guiding principles of the study. The creation of the lesson plans used in this study was based upon the guiding principles of the study. Specifically, the lesson plans focused on: targeting the story grammar units selected in pre-intervention testing and contained developmentally appropriate activities in which the children could be responded to in a contingent fashion. Furthermore, the goals and activities in the lesson plan ensured that the children were moving from comprehension to identification/production of the story grammar units and that they were provided with a structured and unique intervention not attainable in other contexts. Therefore, as the goals and lesson plans of the intervention were based on the guiding principles of the intervention, adherence to the lesson plans led to adherence to the guiding principles of the study. At the end of each treatment session, the researcher noted any large deviation from the lesson plan. No large deviation from the lesson plans was noted. Approximately 5 minutes of each session was spent on classroom routines, such as a welcome song, and behavior management. Total instructional time in each session ranged from 1 hour and 5 minutes to 1 hour and 55 minutes, with a mean of 1 hour and 45 minutes.

Reliability

Point-to-point reliability was calculated for 20% of the samples across testing days, including transcripts for each child. Inter-rater reliability was calculated between for scoring of story grammar units and first mentions. Scoring was done from transcripts, as per the norms of the Edmonton Narrative Norms Instrument. Scoring was completed by a second-year M.Sc.-SLP student who was blind to the timing of the samples and was not involved in the intervention. Scoring of 20% of the transcripts for the purposes of reliability calculations was done by the

researcher's supervisor. Overall inter-rater reliability for scoring of story grammar units was 95%; overall reliability for scoring of first mentions was 80%. Two stories were determined to have poor reliability: the Test of Narrative Language Late for School Story (30% inter-rater reliability) and the Bound C story (40% inter-rater reliability). These two stories were excluded from all calculations of first mentions. The table below shows reliability of scoring for each transcript.

Table 7

Reliability of Scoring by Day

Participants	Transcript 1 SG Scoring	Transcript 1 FM Scoring	Transcript 2 SG Scoring	Transcript 2 FM Scoring
Participant 1	83%	87.5%	75%	N/A (TNL/Bound C)
Participant 2	90%	88%	91%	80%
Participant 3	90%	67%	93%	100%
Participant 5	91%	50%	77%	75%

Note. SG = story grammar, FM = first mentions

Data Analysis by Case

  Participant 1. Participant 1 showed a statistically significant increase in the inclusion of story grammar units and first mentions, as demonstrated by 2 consecutive points above the 1 SD line. He did not show a statistically significant increase in total number of words; however, he did show an increasing trend for thisvariables, indicated by two non-consecutive points above the one standard deviation line. Post-post testing scores decreased for all inclusion of story grammar units and mean total number of words, indicating that this participant did not maintain his

improvement; he likely needed more treatment to be able to maintain his gains. Only one data

point is included in post and post-post treatment testing for first mentions, as the stories

administered on post-treatment day 2 and post-post treatment day 2 were excluded from

calculations of first mentions due to low reliability.
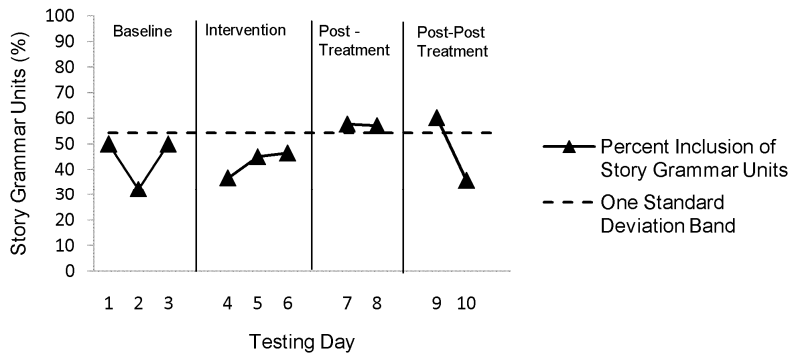
Figure 1. Visual analysis of inclusion of story grammar units for Participant 1.
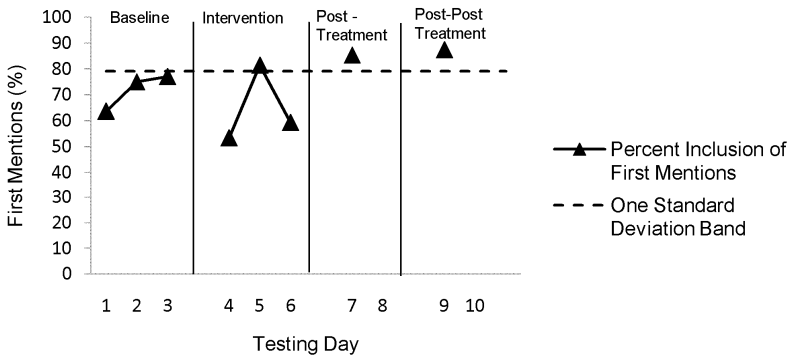
Figure 2. Visual analysis of inclusion of first mentions for Participant 1.
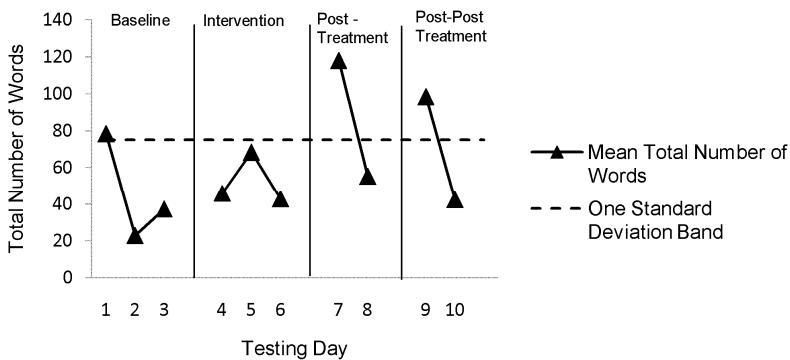
Figure 3. Visual analysis of mean total number of words for Participant 1.

The following transcripts provide examples of improvement in inclusion of story

grammar units over the intervention period.

Child 1 – Pre-intervention Testing – ENNI A1 Story

The first time they were playing marbles at near to the pool.
And you know what's gonna happen.
What! The balls went in the water!
And now have somebody have to swim to get it.
Yay! They get the ball!
Yeah and the elephant got the ball.
Yeah and then they're happy.

In this example, Child 1 included one character (the elephant), the setting (the pool), an initiating

event (balls fell into the water) and a conclusion (the elephant got the ball).

Child 1 – Post-Treatment Testing – ENNI A1 Story

Once upon a time a giraffe and an elephant had balls
And they and they were playing by the pool
But one of the balls fell into the water
And the little giraffe swimming to get it
And then he got it
And then give it back to the little girl
And then they were happy again
And the big boy got very wet

During post-testing, the same child included both characters (a giraffe and an elephant), the setting (the pool), the initiating event (one of the balls fell into the water), an attempt (the little giraffe swimming to get it) and the outcome (then he give it back to the little girl). The following table shows Participant 1's raw and standard scores on the Test of Narrative Language.

Table 8

Participant 1's Raw and Standard Scores on the TNL

TNL Subtests	Pre Treatment	Post Treatment	Post –Post Treatment
Oral Narration Raw	13	10	29
Oral Narration Standard	4	3	8
Narrative Comprehension Raw	14	17	23
Narrative Comprehension Standard	5	6	9
Narrative Language Ability Index	67	67	91

Note. TNL = Test of Narrative Language

Participant 1 showed a slight decrease in both raw and standard oral narration scores in post-treatment testing, but then showed a large increase in oral narration scores in post-post treatment testing. In post-post treatment testing, his results improved significantly and his oral narration scores fell within normal limits. His raw and standard narrative comprehension scores showed a slight increase in post-treatment testing and a large increase in post-post treatment testing, with his narrative comprehension scores improving significantly and falling within normal limits. His Narrative Language Ability Index remained stable between pre- and post-treatment testing, then showed an increase in post-post-treatment testing.

The following table shows Participant 1's raw and standard scores on the ENNI A1 and A3 stories during pre-, post- and post-post treatment testing.

Table 9

Participant 1's Raw and Standard Scores on the ENNI

ENNI Stories	Pre-Treatment	Post-Treatment	Post-Post Treatment
A1 Raw	4	10	10
A1 Standard Score	7	11	11
A3 Raw	21	26	25
A3 Standard Scores	8	12	11

Note: ENNI = Edmonton Narrative Norms Instrument

Participant 1 was within normal limits for his scores on the ENNI A1 and A3 studies in pre-treatment testing. Participant 1 showed an increase in raw and standard scores between pre- and post-treatment testing for ENNI A1; the gains he made in ENNI A1 were maintained in post-post treatment testing. This participant also showed an increase in both raw and standard scores for ENNI A3 between pre- and post-treatment testing; his scores slightly declined between post- and post-post treatment testing, but they were still above the level in pre-treatment testing. The following table shows Participant 1's inclusion of story grammar units during pre-treatment testing, during treatment testing, post-treatment testing and post-post treatment testing.

Table 10

Participant 1's Inclusion of Story Grammar Units

Story Grammar Units	Pre- Day 1	Pre- Day 2	Pre- Day 3	During Day 1	During Day 2	During Day 3	Post Day 1	Post Day 2	Post-Post Day 1	Post-Post Day2
IE	3/7	1/2	2/4	1/2	1/3	2/2	8/9	1/2	7/9	1/2
A	5/7	0/2	3/4	1/2	2/3	2/2	8/9	2/2	8/9	0/2
O	6/7	1/2	3/4	1/2	2/3	0/2	8/9	2/2	8/9	2/2
C	8/11	1/4	9/10	3/5	5/5	4/4	13/13	3/4	13/13	3/4
S	4/4	1/2	2/3	1/2	2/2	0/2	3/4	1/2	3/4	1/2

Note. IE = Initiating Events, A = Attempt, O = Outcome, C = Character, S = Settings

Participant 1 showed an increase in inclusion of initiating events, attempts, outcomes and characters. His inclusion of settings appeared to slightly decrease during the treatment period and then showed a slight increase in post- and post-post testing.

Participant 2. Participant 2 did not show a statistically significant increase in any of the variables of interest (story grammar, first mentions and total number of words) examined using a visual display. Visual analysis indicated that for story grammar units, he had two non-consecutive points above the one standard deviation band. Participant 2's performance appeared to be very variable in post-post treatment testing, indicating that the gains he made during treatment were not maintained. Participant 2 refused to participate in during, post and post-post treatment testing, indicating that he had already seen all of these stories before; this makes drawing conclusions about his gains from the intervention program difficult. Only one data point is included in post and post-post treatment testing for first mentions, as the stories

administered on post-treatment day 2 and post-post treeatment day 2 were excluded from

calculations of first mentions due to low reliability.
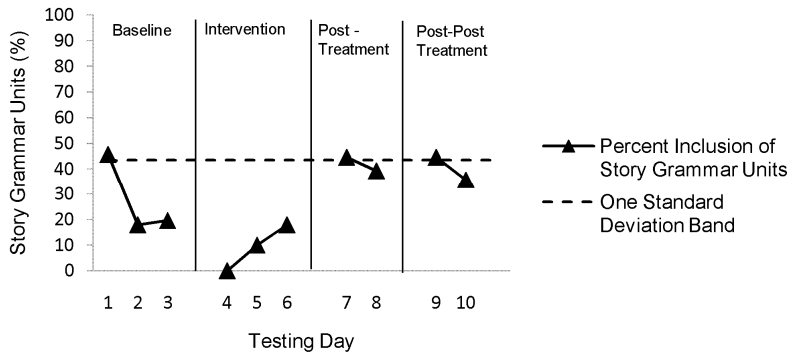
Figure 4. Visual analysis of inclusion of story grammar units for Participant 2.
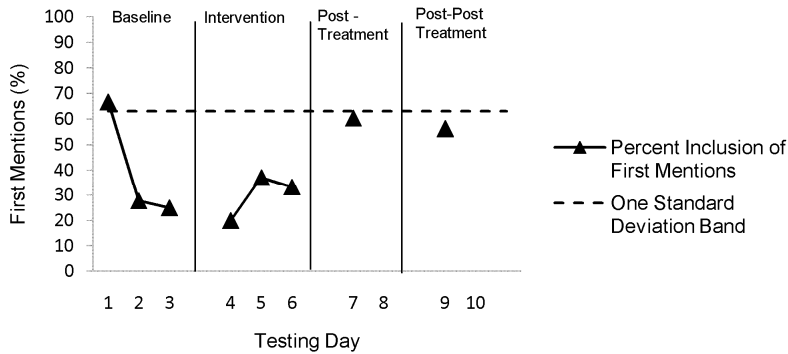
Figure 5. Visual analysis of inclusion of first mentions for Participant 2.
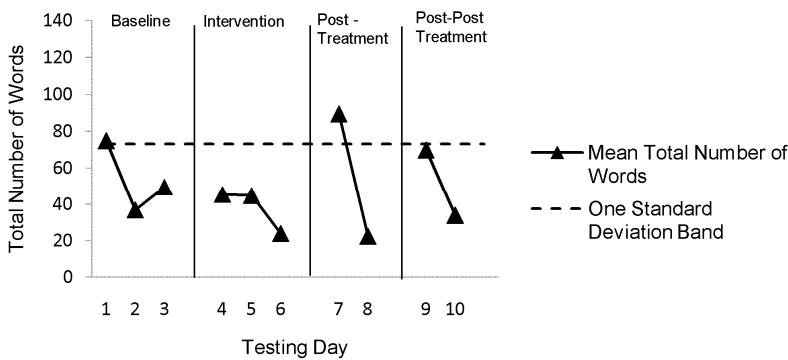
Figure 6. Visual analysis of mean total number of words for Participant 2.

The following story was told by Participant 2, with no cueing, on the last day of treatment:

A dog and a zebra they were at the park
And they were playing on the slide
The bad zebra put an ice cube on the slide
And he cracked his head
So they took him to the doctors and stitched him up all the way to the cheek

This story includes two characters (a dog and a zebra), a setting (the park), an intiating event (the zebra putting ice on the slide), an attempt (one of the characters cracking their head) and an outcome (going to the doctor so and stitching him up all the way to the cheek). This story provides some evidence that Participant 2 was able to produce stories with the necessary story grammar units and introduce characters appropriately, despite his unwillingness to participate in testing. The following table shows Participant 2's raw and standard scores on the Test of Narrative Language.

Table 11

Participant 2's Raw and Standard Scores on the TNL

TNL Subtests	Pre	Post	Post -Post
Oral Narration Raw	11	14	16
Oral Narration Standard	4	5	5
Narrative Comprehension Raw	23	21	23
Narrative Comprehension Standard	10	9	10
Narrative Language Ability Index	82	82	85

Note. TNL = Test of Narrative Language

Participant 2 showed a slight increase in raw and standard scores for oral narration between pre- and post-treatment testing and a slight increase between pre- and post-post treatment testing raw scores, but he did not improve significantly. Participant 2 showed a slight

decrease in raw and standard scores for narrative comprehension between pre- and post-treatment testing, but returned back to pre-treatment testing levels in post-post testing; however, his scores during pre-treatment testing were within normal limits. His Narrative Language Ability Index Score stayed constant between pre- and post-treatment testing and showed a slight increase between pre-and post-post treatment testing, but his scores were within normal limits during pre-testing.

The following table shows Participant 2's raw and standard scores on the ENNI A1 and A3 stories during pre-, post- and post-post treatment testing.

Table 12

Participant 2's Raw and Standard Scores on the ENNI

ENNI Stories	Pre	Post	Post-Post
A1 Raw	6	8	8
A1 Standard Score	3	7	7
A3 Raw	19	18	21
A3 Standard Score	9	8	10

Note. ENNI = Edmonton Narrative Norms Instrument

Participant 2 showed an increase in raw and standard scores between pre- and post-treatment testing for ENNI A1; the gains he made in ENNI A1 were maintained in post-post treatment testing. Participant 2 moved from more than 2 standard deviations below the mean for ENNI A1 during pre-testing, to 1 standard deviation below the mean in post- and post-post treatment testing. This participant also showed a slight decrease in both raw and standard scores for ENNI A3 between pre- and post-treatment testing; his scores increased between pre- and

post-post treatment testing and increased between post- and post-post treatment testing, but his

score had not been low prior to the intervention.

Table 13

Participant 2's Inclusion of Story Grammar Units

Story Grammar Units	Pre-Day 1	Pre-Day 2	Pre-Day 3	During Day 1	During Day 2	During Day 3	Post Day 1	Post Day 2	Post-Post Day 1	Post-Post Day 2
IE	3/7	0/2	1/4	0/2	1/3	1/2	4/9	1/2	3/9	0/2
A	4/7	1/2	1/4	0/2	0/3	0/2	6/9	1/2	8/9	1/2
O	5/7	1/2	2/4	0/2	0/3	1/2	8/9	1/2	9/9	2/2
C	7/11	0/4	2/10	0/5	0/5	0/4	5/13	2/4	4/13	1/4
S	2/4	1/2	1/3	0/2	2/2	0/2	4/4	1/2	3/4	1/2

IE = Initiating Events, A = Attempt, O = Outcome, C = Character, S = Settings

Participant 2 showed an increase in inclusion of outcomes. His inclusion of settings also

increased in post- and post-post treatment testing. His inclusion of attempts increased in post-

post treatment testing. He showed a slight increase in inclusion of initiating events in post-

treatment testing. His inclusion of characters decreased in post- and post-post treatment testing.

As noted earlier, Participant 2 did not want to participate in during, post-, or post-post treatment

testing.

Participant 3. Participant 3, who missed 3 days of treatment, showed a statistically

significant increase in inclusion of story grammar units, first mentions and in mean total number

of words. Participant 3 appeared to continue improving in his inclusion of story grammar units

and first mentions after the intervention, but his total number of words during post- and post-post

treatment testing was variable.
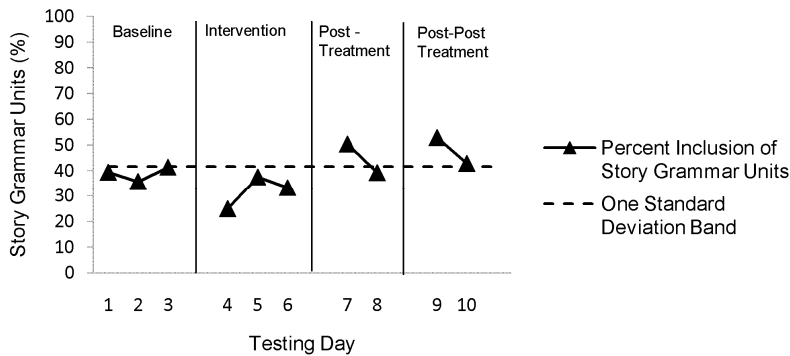
Figure 7. Visual analysis of inclusion of story grammar units for Participant 3.
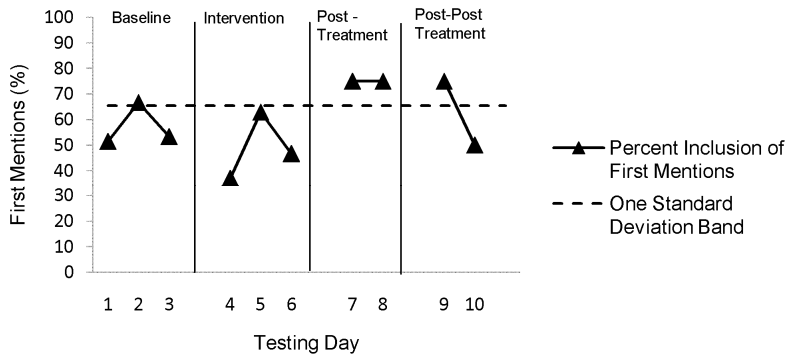
Figure 8. Visual analysis of inclusion of first mentions for Participant 3.
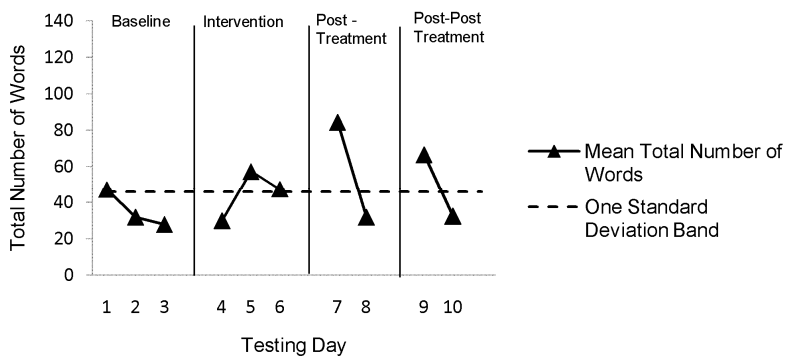
Figure 9. Visual analysis of mean total number of words for Participant 3.

The following transcripts provide examples of improvement in inclusion of story grammar units over the intervention period.

Child 3 – Pre-Treatment Testing – ENNI A2 Story

Then they go to the water
Now they going to walk there
Only run there
And the elephant's going to hit his knee
And he's going to go
And then they hit his knee
And he come
And then it hurts
Then he's all better now
And he points at the sign
No run only walk

During pre-testing, Child 3 included one character, the setting and two outcomes (one for the first episode in the story, one for the second episode).

Child 3 – Post-Treatment Testing – ENNI A2 Story

The girl saw a jumping board
And it said no running
The girl wanted to run there
And the girl run
And her hurted knee
They said no running
And the dad comed
The elephant dad comed to see what is hurting his girl
What's the problem
And his dad is going to fix the problem
The dad fixed the problem
And the dad said he was mad
And said no running

During post-treatment testing, Child 3 included two characters (girl and elephant), the initiating events for both episodes, the attempt for episode one and the outcome for episode one. Child 3 also included an emotional reaction for one of the characters, which was not explicitly taught in the intervention program. This example also shows that the child has learned the

terminology used throughout the intervention program – the dad is going to fix the problem, the dad fixed the problem. This is the terminology we used for attempt and outcome, so this example demonstrates that the child is attempting to use what was taught during the intervention program.

The following transcripts provide examples of increase in total number of words over the intervention period.

Child 3 – Pre-Testing – ENNI A3

Then the boy have a plane
Then it flied
Then the girl sees
Then it falls in the water
And the giraffe gets mad
And his father's trying to get the plane
The father's trying to get the plane
Then they couldn't get the plane
The boy cried
The elephant's mom's going to get it
And the mom get it for her
The elephant's mom get it for her
And he glad his plane is back out of the water

Child 3 – Post-Testing – ENNI A3

First the girl saw a airplane
The boy played with it
And the girl saw it
And the girl stealed it from him
And then he crashed it in the water
He crashed it in the water
And the zebra boy get mad
And the father said what are you doing
The girl was playing with it and stealed it out of his hand
And he throwed it in the water
And dad didn't reach it
He just needed to go in the water and get it
And the mom's going to get it
The mom's almost getting it
And the mom get it
And the boy liked the plane out of the water from the lady get it the elephant lady

During post-testing, Child 3 increased the length of Story A3 by 44 words. The following table shows Participant 3's raw and standard scores on the Test of Narrative Language.

Table 14

Participant 3's Raw and Standard Scores on the TNL

TNL Subtests	Pre	Post	Post -Post
Oral Narration Raw	21	20	11
Oral Narration Standard	7	7	4
Narrative Comprehension Raw	21	16	24
Narrative Comprehension Standard	10	7	11
Narrative Language Ability Index	91	82	85

Note. TNL = Test of Narrative Language

Participant 3 showed a slight decrease in raw and standard oral narration scores between pre- and post-treatment testing and a large decrease between pre-and post-post treatment testing; his pre-intervention testing scores for oral narration were 1 standard deviation below the mean, indicating low-average narrative abilities. He showed a decrease in both raw and standard narrative comprehension score between pre-and post-treatment testing, but an increase between pre-and post-post treatment testing; however, it should be noted that his narrative comprehension scores were within normal limits during pre-treatment testing. His Narrative Language Ability Index score showed a decrease between both pre- and post-treatment testing and between pre- and post-post treatment testing, but he did show an increase between post- and post-post treatment testing for this measure; however, his Narrative Language Ability Index score was within normal limits during pre-treatment testing; during post-treatment testing, his score

dropped below normal limits, but then increased to within normal limits in post-post-treatment testing.

The following table shows Participant 3's raw and standard scores on the ENNI A1 and A3 stories during pre-, post- and post-post treatment testing.

Table 15

Participant 3's Raw and Standard Scores on the ENNI

ENNI Stories	Pre	Post	Post-Post
A1 Raw	8	10	10
A1 Standard Score	10	12	12
A3 Raw	17	19	22
A3 Standard Score	7	9	10

Note. ENNI = Edmonton Narrative Norms Instrument

Participant 3 showed an increase in raw and standard scores between pre- and post-treatment testing for ENNI A1; the gains he made in ENNI A1 were maintained in post-post treatment testing. This participant a showed an increase in both raw and standard scores for ENNI A3 between pre- and post-treatment testing and his scores slightly increased between post- and post-post treatment testing.

Table 16

Participant 3's Inclusion of Story Grammar Units

Story Grammar Units	Pre-Day 1	Pre-Day 2	Pre-Day 3	During Day 1	During Day 2	During Day 3	Post Day 1	Post Day 2	Post-Post Day 1	Post-Post Day 2
IE	2/7	0/2	2/4	1/2	1/3	0/2	8/9	½	8/9	0/2
A	3/7	1/2	2/4	0/2	1/3	0/2	5/9	½	7/9	2/2
O	6/7	2/2	2/4	1/2	1/3	2/2	8/9	2/2	7/9	2/2
C	8/11	3/4	8/10	0/4	5/5	4/5	12/13	2/4	12/13	4/4
S	3/4	0/2	2/3	0/2	1/2	1/2	1/4	1/2	1/4	0/2

Note. IE = Initiating Events, A = Attempt, O = Outcome, C = Character, S = Settings

Participant 3 showed an increase in inclusion of initiating events, attempts, outcomes and characters in post- and post-post treatment testing. His inclusion of settings decreased in post- and post-post treatment testing.

Participant 5. Participant 5 showed a statistically significant increase in first mentions and in mean total number of words. The gains she made in first mentions did not appear to be maintained during post- and post-post treatment testing, but the gains she made in total number of words did. She showed no clear trend in her inclusion of story grammar units. The following two transcripts provide examples of improvement in inclusion of first mentions over the intervention period.
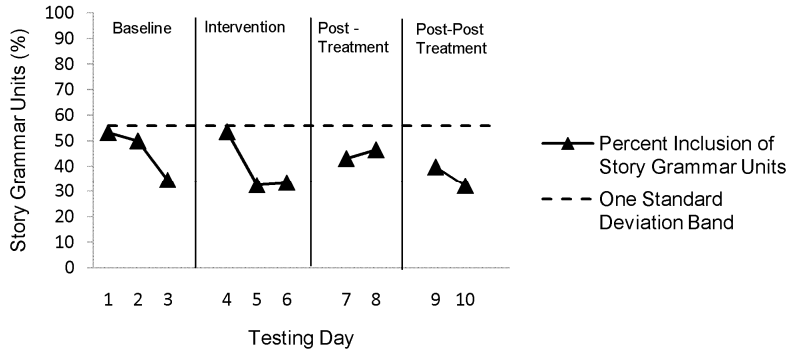
Figure 10. Visual analysis of inclusion of story grammar units for Participant 5.
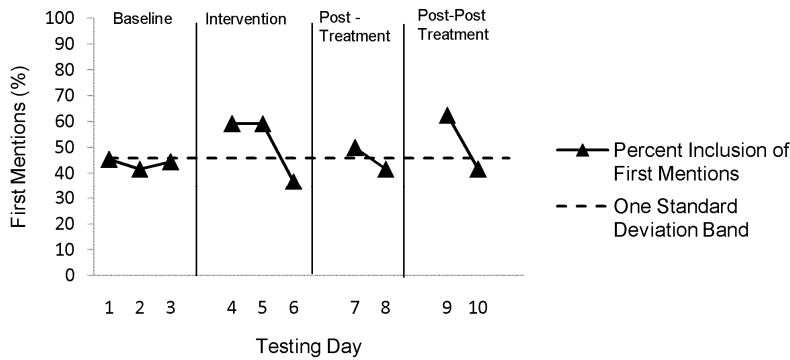
Figure 11. Visual analysis of inclusion of first mentions for Participant 5.
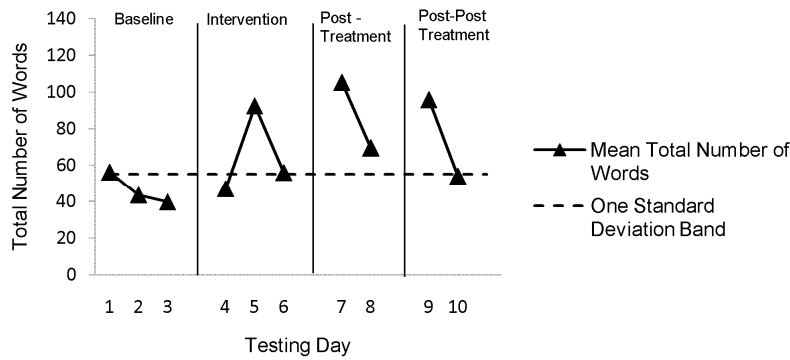
Figure 12. Visual analysis of mean total number of words for Participant 5.

Child 5 – Pre-Treatment Testing – ENNI A2 Story

She's going in the swimming pool
She runned and got her hurt
Got hurt
And she runned she slipped on the water
Now she started crying
And then her brother or sister comed
Her brother
And her brother helped her
And she got a bandaid
And then it fixed
And she stopped the crying
And that's the ended

In pre-treatment testing, Child 5 introduced 2 of the 3 characters in the story using pronouns.

Only one character was introduced using a possessive and a noun.

Child 5 – Post-Treatment Testing – ENNI A2 Story

It's a little girl playing with her friend
And she said let's go in the water
And the giraffe didn't have a suit
She started running
And she slipped and got a booboo
And her brother runned fast as he can and got a bandaid
And she stopped crying
She is frustrated
And she the brother said no more running
Okay brother
And brother said you run
Here's the saying

In post-testing, Child 5 introduced all of the characters in Story A2 using nouns. One

was introduced using an indirect article plus noun, one was introduced using a direct article plus

noun and another was introduced using a possessive pronoun plus noun.

The following two transcripts provide examples of increase in total number of words over the

intervention period.

Child 5 – Pre-Testing – ENNI Story A1

They're playing marbles
And they dropped a marble in the water
The boy swimmed and get the marble
And the little girl went got it
And he climbed back in
He was drying off

Child 5 – Post-Testing – ENNI Story A1
It's a girl have the ball
And then the girl dropped one of the boy's balls in there
And then he swam fast as he can and got the ball
And then he got it back to the little girl
And then after he said thank you

During post-testing, Child 5's Story A1 length increased by 13 words.

The following table shows Participant 5's raw and standard scores on the Test of Narrative

Language.

Table 17

Participant 5's Raw and Standard Scores on the TNL

TNL Subtests	Pre	Post	Post -Post
Oral Narration Raw	22	18	17
Oral Narration Standard	7	6	5
Narrative Comprehension Raw	19	23	20
Narrative Comprehension Standard	7	10	9
Narrative Language Ability Index	82	88	82

Note. TNL = Test of Narrative Language

Participant 5 showed a slight decrease in raw and standard scores for Oral Narration

between pre- and post-treatment testing and a decrease between pre- and post-post treatment

testing; her standard score was 1 standard deviation below the mean in pre-treatment testing,

indicating low average narrative abilities. She showed a slight increase in raw and standard

Narrative Comprehension scores between pre-and post-treatment testing, as well as between pre-

and post-post treatment testing. In post-treatment testing, Participant 5 increased her standard

score by 1 standard deviation, indicating a significant change. There was a slight decline in raw

and standard Narrative Comprehension scores between post- and post-post treatment testing.

Participant 5 showed an increase in Narrative Language Ability Index scores between pre- and

post-treatment testing, but returned to pre-treatment levels in post-post treatment testing.

The following table shows Participant 5's raw and standard scores on the ENNI A1 and

A3 stories during pre-, post- and post-post treatment testing.

Table 18

Participant 5's Raw and Standard Scores on the ENNI

ENNI Stories	Pre	Post	Post-Post
A1 Raw	9	10	4
A1 Standard Score	11	12	6
A3 Raw	20	17	14
A3 Standard Score	9	7	6

Note. ENNI = Edmonton Narrative Norms Instrument

Participant 5 showed an increase in raw and standard scores between pre- and post-

treatment testing for ENNI A1; however, her scores decreased between pre and post-post

treatment testing. This participant a showed a decrease in both raw and standard scores for

ENNI A3 between pre- and post-treatment testing and her scores slightly declined between post-

and post-post treatment testing. Participant 5 was within normal limits on ENNI A1 and A3

prior to intervention, but after treatment was more than one standard deviation below the mean.

She improved in her narrative comprehension scores on the Test of Narrative Language, as well on her inclusion of characters, as measured by first mentions, so it could be that this child's improvement in other aspects of narratives was done at the expense of her inclusion of story grammar units.

Table 19

Participant 5's Inclusion of Story Grammar Units

Story Grammar Units	Pre- Day 1	Pre- Day 2	Pre- Day 3	During Day 1	During Day 2	During Day 3	Post Day 1	Post Day 2	Post- Post Day 1	Post- Post Day 2
IE	4/7	1/2	2/4	1/2	0/3	1/2	2/9	0/2	2/9	0/2
A	6/7	2/2	1/4	2/2	1/3	0/2	6/9	1/2	5/9	2/2
O	7/7	2/2	3/4	1/2	1/3	1/2	7/9	2/2	5/9	1/2
C	7/11	2/4	4/10	4/4	3/5	3/5	9/13	4/4	11/13	0/4
S	3/4	0/2	2/3	1/2	2/2	1/2	2/4	1/2	3/4	1/2

Note. IE = Initiating Events, A = Attempt, O = Outcome, C = Character, S = Settings

Participant 5 showed an increase in characters in post- and post-post treatment testing. Her inclusion of initiating events, attempts and outcomes appeared to decrease after the treatment period. Her inclusion of settings remained somewhat static throughout all of the conditions.

Summary of Results

The primary variable of interest in this study was whether an intensive narrative intervention program would increase a child's inclusion of story grammar units, first mentions scores and total number of words in stories. Two of the four children (Child 1 and Child 3) who completed the full two week intervention program demonstrated a statistically significant

improvement in inclusion of story grammar units, as determined by visual analysis of data.

Other variables of interest included narrative microstructure, as measured by first mentions, and

language quantity, as measured by mean total number of words per story. Two of the four

participants showed a statistically significant increase in inclusion of first mentions (Child 3 and

Child 5), and two of the four showed a statistically significant improvement in total number of

words (Child 3 and Child 5).   Child 1 also showed increasing trends in inclusion of first

mentions and mean total number of words. Thus, 3 of the 4 children who participated in the full

two weeks of intervention showed either a significant change or an increasing trend in the three

variables of interest in this study. Child 2 did not show a clear increasing trend in any of the

three variables of interest, but he also demonstrated behavioural difficulties during testing that

were not present during the intervention. Specifically, Child 2 was very interested in

participating during the group intervention, but he refused to tell stories in the during treatment

testing and resisted participation in the post-treatment testing, saying that he had already told

these stories and did not want to tell them again.

All of the children appeared to perform strongly on Day 1 of pre-treatment testing. This

is likely due to the test and story administered on that day, which was the ENNI. The children

appeared to initially perform better on the ENNI than on the TNL; therefore their strong start is

likely due to the fact that the ENNI was the first standardized test administered. This is also true

of post- and post-post treatment testing; the ENNI was administered on the initial day of post-

and post-post treatment testing; therefore the participants' stronger performance on these two

days is likely related to the administration of the ENNI on those days. The ENNI stories were

designed to elicit specific story grammar units; the TNL Late for School story was scored using

story grammar, but it did not appear to elicit story grammar units as easily as the ENNI did. This

discrepancy between the initial and second day of testing in pre-, post- and post-post is likely due to the difference between the stories used. In future research, it may be beneficial to use stories that were either specifically designed to target story grammar units or that easily lend themselves to story grammar scoring, in order to prevent similar scoring discrepancies.

An examination of inclusion of story grammar units per data point showed that Participant 1 increased in his inclusion of initiating events, attempts, outcomes and characters. Participant 2 showed an increase in inclusion of outcomes, settings and attempts and a slight increase for initiating events in post-testing; however his inclusion of characters decreased. Participant 3 showed an increase in inclusion of initiating events, attempts, outcomes and characters, but a decrease in inclusion of settings. Participant 5 only showed an increase in her inclusion of characters; her inclusion of settings remained static throughout and she showed a slight decrease in initiating events, attempts, and outcomes. Three of the four participants in this study showed an increase in 4 of the 5 story grammar elements targeted in the intervention; the remaining child only showed an increase in inclusion of one story grammar element.

Another research question investigated whether intensive narrative intervention would improve a child's raw and standard score on the Edmonton Narrative Norms Instrument and on the Test of Narrative Language. Participant 1 showed a slight decrease in the Oral Narration portion of the TNL in post-treatment testing, and an increase in post-post treatment testing. The Narrative Comprehension and Narrative Language Ability Index raw and standard scores increased in post and post-post treatment testing for this child. Participant 2 showed an increase in raw and standard scores for the Oral Narration portion, a slight decrease in Narrative Comprehension in post-treatment testing, with a return to pre-treatment levels in post-post treatment testing. His Narrative Language Ability Index score remained constant in post-

treatment testing and then showed an increase in post-post treatment testing. Participant 3 showed a decrease in Oral Narration raw scores in post-treatment testing, but his standard scores remained constant. In post-post testing his Oral Narration raw and standard scores decreased. Participant 3's Narrative Comprehension raw and standard scores in post-testing, but an increase in post-post testing; his Narrative Language Ability Index score decreased. Participant 5 showed a decrease in Oral Narration raw and standard scores decrease in post- and post-post treatment testing; her Narrative Comprehension raw and standard scores increased in post treatment testing, but returned to pre-treatment levels in post-post treatment testing. Her Narrative Language Ability Index score increased in post-treatment testing then decreased to pre-treatment levels in post-post treatment testing. Narrative Comprehension scores increased in post-treatment testing for all participants, Oral Narration scores increased for two of the participants and decreased for the other two participants. Narrative Language Ability Index scores increased for two participants and decreased for the other two. These results suggest that the intensive narrative intervention increased narrative comprehension abilities for the majority of participants and had a positive effect on oral narration abilities in half of the participants; additionally, the intensive narrative intervention had a positive effect on overall narrative abilities in half of the participants.

Participant 1 showed an increase in raw and standard scores for the ENNI A1 story and for the ENNI A3 story, but showed a slight decrease in post-post treatment testing for ENNI A3. Participant 2 showed an increase in raw and standard scores on ENNI A1 in post-testing, which remained constant in post-post testing. This participant showed a slight decrease on ENNI A3 in post-treatment testing, but increased in post-post treatment testing. Participant 3 showed an increase in raw and standard scores on both ENNI A1 and A3 stories. Participant 5 showed an

increase in raw and standard scores for ENNI A1 in post-treatment testing, but a large decrease in raw and standard scores for post-post treatment testing. This participant also showed a decrease in scores on ENNI A3 for both post- and post-post treatment testing. These results indicate that the intensive narrative intervention increased scores on the ENNI A1 and, in most cases, increased scores on ENNI A3.

Participant 1 showed increases in inclusion of story grammar units, as measured by visual display of data, increases in all scores on the TNL and the ENNI and increases in inclusion of initiating events, attempts, outcomes and characters. He presented with low-average receptive language abilities and a mild expressive language delay. The day he missed in treatment did not appear to impact his performance in post- or post-post treatment testing.

Participant 2 showed an increase in all scores on the Oral Narration and Narrative Language Ability Index on the TNL, an increase in all scores in on the ENNI A1 and A3 and an increase in inclusion of initiating events, attempts, outcomes and setting. He presented with average receptive language abilities, a moderate expressive language delay, a severe phonological delay and refused to participate during treatment testing, which may have affected his lack of improvement on inclusion of story grammar units, first mentions and total number of words when using a visual display. The days that Participant 2 missed focused on initiating events and production of all story grammar units and did not appear to affect his performance in post- and post-post treatment testing. Additionally, his phonological delay may have impacted the accuracy of transcription, thereby impacting the accuracy of his scoring.

Participant 3 showed an increase in inclusion of story grammar units and mean total number of words, as measured by visual analysis of data, an increase in all scores on the ENNI A1 and A3 and an increase in inclusion of initiating events, attempts, outcomes and characters.

Participant 3 showed a decrease in Oral Narration and Narrative Language Ability Index scores but an increase in Narrative Comprehension scores. Participant 3 presented with a moderate expressive language delay, a moderate-severe receptive language delay and a moderate phonological delay. The days that Participant 3 missed did not appear to impact his performance during testing.

Participant 5 showed an increase in inclusion of first mentions and in mean total number of words, as indicated by visual analysis of data. She showed an increase in inclusion of characters. Participant5 showed an increase in Narrative Comprehension scores and in Narrative Language Ability Index scores but decreased in Oral Narrative scores. She showed an increase in raw and standard scores on the ENNI A1 story in post-testing but a decrease in post-post testing, as well as a decrease in ENNI A3 scores. Participant 5 presented with low average receptive language abilities, moderate expressive language delays and a moderate phonological delay. She did not miss any days of treatment.

All of the children who participated in this study were able to correctly name and order the story grammar markers. However, just 2 of them improved in their inclusion of story grammar units based on a visual display of data. Three of the participants showed an increase in the three core story grammar elements (initiating event, attempt and outcome) when specifically examining the number of story grammar elements they included.

CHAPTER FOUR

Discussion

The dependent measures in this study included: improvement in narrative skills (as measured by inclusion of story grammar units, first mentions and total number of words) as well as improvement on standardized narrative assessment tools. The results garnered by this study indicate that intensive narrative intervention results in an improvement in both narrative skills and scores on narrative assessment tools.

Interpretation of Results

These results indicate that intensive narrative intervention in groups is an effective method of treatment for early-school aged children with narrative impairments. The two children (Participant 1 and Participant 3) who showed increases on all measures had a low average receptive and a mild expressive language delay and a moderate receptive and a moderate-severe expressive language delay, as well as a moderate phonological delay. Participant 2 and Participant 5 showed less overall improvement across all of the measures – Participant 2 presented with average receptive language abilities, moderate expressive language delays and a severe phonological delay. Participant 5 presented with low average receptive language abilities, moderate expressive language delays, and a moderate phonological delay. The two children who improved most in the intervention did not drastically differ from the two children who showed less improvement; Participant 1 and Participant 3 showed minimal behavioural difficulties within the intervention and testing and were easily redirected when difficulties occurred. Participant 2 refused to participate in testing, which could have resulted in skewed results. Participant 5 readily participated in treatment and in testing, but throughout the intervention she appeared to focus on the characters in her stories, to the detriment of other story

elements. Thus, behavioural factors seem to have affected the benefit that the children received from this intervention program. Children with phonological delays appear to benefit from intensive narrative intervention, as the performance of two of the three participants with phonological delays increased as a result of this treatment.

Overall inter-rater reliability for scoring of story grammar units was 95%, indicating good reliability. Reliability for scoring of first mentions was 80% after two stories with low reliability were eliminated from the data; one of the scorers had much more experience scoring first mentions, which could account for these differences.

The results found in this study approximate the results found in other investigations of narrative intervention. Hayward and Schneider (2000) found that the majority of the preschool students in their program (12/13) increased in their inclusion of story grammar units; this study was a group-based intervention with young children, so it was very similar to the intervention provided here. Idol and Croll (1987) found that all 5 of the school-age children in their study improved in their inclusion of story grammar units; however, their ABA design allowed them to continue the intervention until 80% accuracy was reached for all participants. Swanson et al. (2005) found that 8 of 10 school-age children exceeded clinically significant improvement criteria for narrative quality, a summary measure of children's story organization, story content and language sophistication; their narrative-based language intervention program ran for 6 weeks, which is much longer than the two-week intervention program investigated in this study. Cable (2008) found an increase in the length and complexity of stories, as measured by communication units; the intervention for their school-age children was approximately the same length as the current study (11 hours), although Cable's intervention took place over an 8-week period. Westerveld and Gillon (2008) did not find an improvement in school-age children's oral

story production abilities; however, they used a story grammar rubric that they hypothesized could have accounted for the apparent lack of improvement in narrative abilities.

Intensive narrative intervention in a group setting provides children with practice related not only to their narrative skills, but with many other areas of language. Specifically, intensive narrative intervention with a focus on producing stories orally provides children the opportunity to see models of, and to practice, correct syntactical structure, relating information, specific vocabulary, and concepts, such as cause and effect, amongst others. This practice and exposure could positively impact the language abilities of children.

Limitations

Several factors limit generalization in the current study. First, the study had a small sample size - 4 children completed the intervention. As the sample size was small, it is difficult to generalize the results to a larger population. However, due to the fact that this was a pilot study to determine if further investigation of intensive narrative intervention is warranted, the small N was deemed to be acceptable. Secondly, attendance during the intervention period was an issue. Three of the four children who participated in the full two weeks of the study missed at least one day of the program; it is difficult, then, to generalize the results as 75% of the participants did not partake in the full intervention. It is not known if the study's results would have been different if all of the participants attended all of the sessions. However, it should be noted that the child who missed the most intervention time improved on 2 of the 3 measures. Another factor limiting the generalization in the current study is the use of stories for during-treatment testing that had not been trialed prior to the intervention. Although these stories contained all the necessary story grammar units, the children may have found some of them difficult to understand and therefore these stories may not have been appropriate to show a

change in the variables of interest within the during-treatment testing period. Performance was

variable on these stories, as some children performed better than others on the non-trialed stories

than others; there was no clear pattern of difficult stories.   In future studies, it would be

beneficial to trial the stories used during testing to ensure a clear pattern of results; that is, only

stories that are clearly understood by the majority of children should be used as testing stories. A

final factor affecting the generalization of results in the current study is that all 5 of the children

in the study were enrolled in the same inner-city school in Edmonton, Alberta. The results

obtained in this study, therefore, can only be generalized to other children aged 5;0 to 7;2

attending Kindergarten and Grade 1 in inner-city Edmonton. A broader catchment area would

allow the results to be generalized beyond this group of children. It could be argued, however,

that if this study can be considered successful in some degree with this challenging demographic

group, it is likely to be successful with children in less challenging circumstances. Another

potential limitation could be the changes in test administrators across conditions; the children

were tested by two different individuals, who also participated in the intervention program. In

future studies, it may be beneficial to have a sole person responsible for testing, who is not

involved in the intervention program, in order to eliminate any confound that may occur due to

changes in test administrators.

      The results of this study clearly indicate that intensive narrative intervention is a

treatment method that warrants further investigation. However, there are some changes that

should be made to the treatment design in future studies. This study used standardized tests as

pre- and post-treatment measures; however, it may have been more appropriate to have the

participants tell their own stories during pre-, post- and post-post testing to determine their

narrative abilities without the use of story stimuli. This also may have had the additional benefit

of preventing the behavioural difficulties which occurred in the post-treatment testing periods, as some of the children appeared bored with the stimuli used in testing situations.

A further change to future studies of intensive narrative intervention should be the duration of the intervention for children at this age and developmental level. The participants in the present study had difficulties sustaining their concentration for 1 hour and 55 minutes and were more distractible towards the end of each day, despite the variety of activities and the recess break scheduled during the intervention period. Future studies investigating this age group may find that the children may respond better to a shorter session (e.g., 1 hour and 15 minutes) spread over a longer time period (e.g., 3 weeks). Increasing the overall amount of intervention time could also provide future participants more time to learn and implement the concepts taught during intervention.

It may also be beneficial to include a home component to an intensive narrative intervention study. Parents could be trained to deliver a structured program at home to reinforce the ideas taught within the narrative intervention and to provide the children with further practice in telling stories.   Parents could also be trained to participate in the intervention program itself. They could be taught the story grammar units and be instructed on ways to provide feedback regarding their child's inclusion of story grammar units during intervention activities.

A tighter behavioural screening process to determine if a child is appropriate for a group intervention setting may be beneficial for future studies of intensive narrative intervention. This study had two children who showed behavioural difficulties – one demonstrated behavioural difficulties during the intervention and testing and another showed difficulties during the testing. Increased screening for behavioural difficulties in the future may rule out children who may act

as distractions during the narrative intervention program and who refuse to participate in testing, thereby affecting the results.

This study showed that intensive narrative intervention is a viable method of treatment for children with impaired narrative abilities. Despite the limitations of the study, this intervention protocol improved several different measures of narrative abilities for 4 inner-city children in Edmonton, AB. These results indicate that intensive narrative intervention warrants further investigation as a method of treatment for impaired narrative abilities.

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Appendix A: Story Grammar Markers
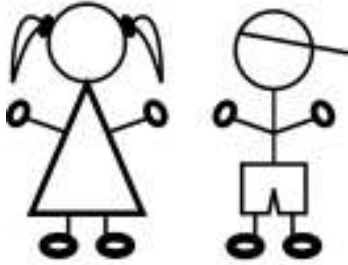
Characters

Setting
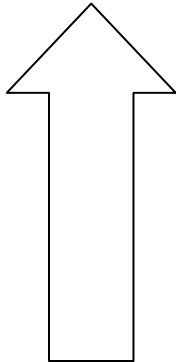
Initiating Event
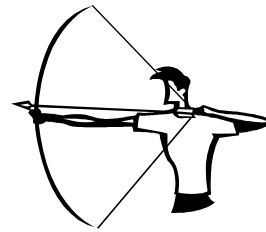
Attempt
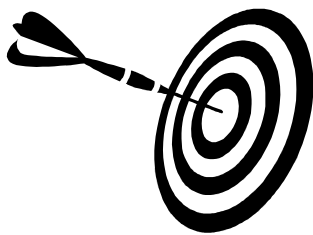
Outcome

Appendix B: Story Starter Sentences

There was a little boy at home getting ready for school. He was almost ready to go but he couldn't find his_____

A little girl woke up after a sleepover at her Grandparents house. She was so hungry and went downstairs for breakfast, but she couldn't find_____.

A boy and his dog were playing ball in the backyard. The boy threw the ball so hard that _____.

A girl and her cat were playing with string in her bedroom. The cat jumped up to catch the string but knocked over the _____.

A boy was going to his best friend's birthday party. He got to his friend's house and the boy realized he forgot his _____.

Appendix C: Characters, Settings and Initiating Events

Characters	Settings	Initiating Events
Dragon	House	Glasses broke
Princess	Pet store	Lost their dog
Dog	Airplane	Forgot their coat
Boy	Store	Couldn't find their backpack
Cat	Pool	Got lost
Farmer	Castle	Fell down
Mouse	Park	Lost a shoe
Elephant	School	Feeling sick

Appendix D: Intervention Goals and Lesson Plans

Goals

1. The child will associate each story grammar element with its associated marker by providing the correct story grammar element name.

2. The child will correctly order the story grammar markers.

3. The child will identify each story grammar unit when presented with a wordless picture story with:

   a. a visual cue (marker)

   b. Without visual cue

4. The child will produce a story containing all targeted story grammar elements with:

   a. A visual cue

   b. No visual cue

5. The child will correctly identify a missing story grammar element in an orally presented story with:

   a. A visual cue

   b. No visual cue

6. The child will produce a specific story grammar unit in the context of a treatment activity with:

   a. A visual cue

   b. No visual cue.

7. The child will increase his or her understanding of a story grammar unit, through exposure to:

   a. Story grammar markers

b.   wordless picture books

8.   The child will produce a story containing all story grammar units using a wordless picture story.

Lesson plans

Day 1 – 1 hr, 55 minutes			
Time	Goal	Activity	Materials
10 minutes	To increase understanding of SG units: story.	Story Time	Good Dog Carl Book
20 minutes	To increase understanding of SG units: SG markers To increase understanding of SG units: story.	Introduce and explain each SG unit using SG markers. Relate SG elements to a wordless story.	Story Grammar Carabiner - completed with markers Frog, Where Are you?
20 minutes	To increase understanding of SG units: SG markers To increase understanding of SG units: story. To produce SG unit in activity.	Re-introduce characters: what they are, how we introduce them, why they are important. Get children to identify & produce different characters in Good Dog Carl. Get children to think of descriptive words for characters.	Good Dog Carl Whiteboard and markers
15 minutes	To increase understanding of SG units: SG markers. To associate SG element with SG name.	Children to create their own character SG marker.	Story Grammar Carabiner -character markers (6) -markers for colouring -carabiners (6)
15 minutes	To increase understanding of SG units: SG markers To increase understanding of SG units: story. To produce SG unit in activity.	Re-introduce settings: what they are, how we introduce them, why they are important. Get children to identify & produce settings in Good Dog Carl. Get children to think of descriptive words for settings.	Good Dog Carl Whiteboard and markers
20 minutes		recess	
10 minutes	To increase	Children to create their own	Story Grammar

	understanding of SG units: SG markers. To associate SG element with SG name.	character SG markers.	Carabiner -setting markers (6) -markers for colouring -carabiners (6)
15 minutes	To produce SG unit in activity.	Children will create one of the characters from Good Dog Carl from play-doh & talk about the characters.	Play-doh
15 minutes	To identify SG unit in stories: SG markers.	Children will identify characters and setting in stories.	
5 minutes	To produce all SG units using a wordless story.	Children will take turns telling Good Dog Carl, one page at a time.	Good Dog Carl

Day 2 1 hr, 55 minutes			
Time	Goal	Activity	Materials
5 minutes	Behaviour management	Each child will make their own name tag and then place it on their spot in the circle.	-index cards -markers -tape
5 minutes	Behaviour management	Review rules for the room 1. Put our hands up to talk 2. When we are in this room, we talk about stories. I know you have lots of interesting things to tell me, but you can tell me after. 3. Respect our friends' space – no touching other friends	
5 minutes	Behaviour management	Welcome song	
10 minutes	To identify SG unit in stories: SG markers. To increase understanding of SG units: story.	Story Time. Ask the children what the setting is and who the characters are	Carl Goes To Daycare
5 minutes	To associate SG element with SG marker.	Review SG units with children.	-SG markers
15 minutes	To increase understanding of SG units: SG markers To increase understanding of SG units: story.	Re-introduce initiating event, attempts and outcomes. Get children to identify each in A Boy, A dog and a frog.	-frog story
15 minutes	To increase	Children will make their own SG	Story Grammar

	understanding of SG units: SG markers. To associate SG element with SG name.	markers for initiating event, attempt and outcome.	Carabiner -story starter markers (6) -markers for colouring -carabiners (6)
20 minutes		Recess	
10 minutes	To increase understanding of SG units: SG markers To correctly order story grammar units.	Review all SG markers. Ask children to tell which SG comes next.	-SG cards
10 minutes	To produce SG units with a wordless story	The children will order story cards correctly, then each produce the SG unit that their story card represents.	-story sequencing cards
30 minutes	To produce SG unit in activity: visual cue.	The children will draw a picture with a setting and character (provided by researcher) & then make up a story about the picture. Adults will write the story down.	Paper Markers Duo tangs to put stories in
5 minutes	Behaviour management	Goodbye song.	

Day 3 – 1 hr 55 minutes			
Time	Goal	Activity	Materials
5 minutes	Behaviour management	Review rules for the room	
5 minutes	Behaviour management	Welcome song	
10 minutes	To increase understanding of SG units: story.	Story Time	Carl Goes To Daycare
20 minutes	To increase understanding of SG units: SG markers. To correctly order story grammar units. To produce SG unit in activity: visual cue.	Review names of SG markers. Pass out SG markers and get children to correctly order them. Have children produce ideas for each SG unit for a story, and create a story together.	-SG markers
20 minutes	To produce SG unit in activity: visual cue. To increase understanding of SG units: SG markers.	Review setting. Have children come up with settings for specific characters. Children will be pulled for during treatment testing throughout this activity.	-pen -paper

15 minutes	To produce SG unit in activity: without visual cue.	Children will be given headbands with a setting on it. Other children will have to give clues to help child identify specific setting. Children will be pulled for during treatment testing throughout this activity.	-headbands
20 minutes		Recess	
10 minutes	To produce SG unit in activity: with visual cue.	Provide story starter sentences to each child. The children will then get to tell attempt and outcome to complete story.	story starter sentences X 10 -brown bag X2
10 minutes	To produce story with SG units in a wordless story.	Provide story sequencing pictures to children. Have them correctly order the pictures, and then tell the story.	-story puzzles
10 minutes	To increase understanding of SG units: story. To identify SG units in a wordless story.	Read a scene from a wordless story book to children. Then go back and have children identify each SG unit	Frog, Where are you? Story Grammar Carabiners
10 minutes	To produce SG unit in activity: visual cue.	The children will draw a picture with a setting and character (provided by researcher) & then make up a story about the picture. Adults will write the story down.	Paper Markers Duo tangs to put stories in

Day 4 – 1 hr 5 minutes			
Time		Activity	Materials
5 minutes	Behaviour Management	Welcome Song	
5 minutes	To identify SG unit in stories: SG markers. To increase understanding of SG units: story.	Story Time. Ask the children what the setting is and who the characters are	Carl Goes To Daycare
5 minutes	To associate SG element with SG marker.	Review all SG units.	-SG carabiner
5 minutes	To produce SG unit in activity: visual cue.	Children will pull setting, character, problem from bags and then complete "silly stories" with attempt and outcome.	-characters, settings, problems -paper bags X 2

10 minutes	To produce SG unit in activity: visual cue.	Provide children with problems and get them to brainstorm attempt	-problems
5 minutes	To identify if SG element missing in orally presented story.	Children will stand in a line and listen to stories. If story has a problem, children will stay where they are. If story does not have a problem, they will step forward.	-short stories with problems and no problems
5 minutes	To increase understanding of SG units: story.	Show children two story pictures and explain cause & effect. Say what happened in both pictures, and then explain why that happened.	-SG cards
10 minutes	To increase understanding of SG units: story. To identify SG unit in stories: without markers. To produce SG unit in activity: no visual cue.	Look at stories and get children to identify problems. When problem is identified, ask children to brainstorm attempts.	-books (classroom)
10 minutes	To produce SG unit in activity: visual cue.	Get children to draw a picture with a problem in it.	-paper -markers
5 minutes	To increase understanding of SG units: story.	Story time	Carl Goes Shopping

Day 5 – 1 hr, 55 minutes			
Time	Goals	Activity	Materials
5 minutes	Behaviour Management	Welcome Song	
10 minutes	To increase understanding of SG units: story.	Story Time	Carl Goes Shopping
10 minutes	To associate SG element with SG marker.	Review all SG units.	SG Marker
20 minutes	To produce a story with all SG units.	The children will draw a picture & then make up a story about the picture. Adults will write the story down.	Paper Markers Duo tangs to put stories in
10 minutes	To produce a story with all SG units.	Children will "read" their stories out loud and the other children will act them out.	-stories -props
15 minutes	To produce story with SG units in a wordless	Provide story sequencing pictures to children. Have them correctly order the	-picture cards

	story.	pictures, and then tell the story.	
20 minutes	Recess		
10 minutes	To increase understanding of SG units: story. To identify SG unit in stories: without markers. To produce SG unit in activity: no visual cue	Look at stories and get children to identify problems. When problem is identified, ask children to brainstorm attempts.	-books (classroom)
10 minutes	To produce SG unit in activity: no visual cue	Have children take turns playing "Character charades" (i.e. being a character) and have the other children identify the character. Once character is identified, have children identify a problem that this character could have.	None
10 minutes	To increase understanding of SG units: story.	Story Time	Carl Goes Shopping
10 minutes	To identify SG unit in stories: with markers.	Get children to identify SG units in story.	Carl Goes Shopping
5 minutes	Behaviour Management	Goodbye song	

Day 6 – 1 hr 55 minutes			
Time	Goal	Activity	Materials
5 minutes	Behaviour Management	Welcome Song	
10 minutes	To increase understanding of SG units: story.	Story Time	Carl Goes Shopping
10 minutes	To associate SG element with SG marker.	Review all SG units.	SG Marker
15 minutes	To produce SG unit in activity: visual cue.	Provide children with initiating events and have them brainstorm attempts and outcomes. During this, children will be pulled out individually for during treatment probes.	-paper -pens
15 minutes	To produce SG unit in activity: visual cue.	Children will pull setting, character, problem from bags and then complete	-characters, settings,

		"silly stories" with attempt and outcome. During this, children will be pulled out individually for during treatment probes.	problems -paper bags X 2
15 minutes	To produce SG unit in activity: no visual cue.	Children will create characters by making dog puppets. Once dog puppets are completed, talk about some problems that the character could get into.	-paper bags -dog puppet templates -glue -markers
20 minutes		Recess	
10 minutes	To produce a story with all SG units.	Children will tell a story about their dog puppets. Adults will transcribe stories.	-puppets -pens -paper
10 minutes	To produce a story with all SG units.	Children will "read" their stories to other children.	
10 minutes	To produce a story with all SG units.	The children will draw a picture & then make up a story about the picture. Adults will write the story down.	Paper Markers Duo tangs to put stories in
10 minutes	To produce story with SG units in a wordless story.	Story time. Children will help to tell the story.	Carl Goes Shopping
5 minutes	Behaviour management.	Goodbye song.	

Day 7 – 1 hr, 55 minutes			
Time	Goal	Activity	Materials
5 minutes	Behaviour Management.	Welcome song.	
10 minutes	To increase understanding of SG units: story.	Story Time	Good Dog Carl
10 minutes	To associate SG element with SG marker. To identify SG unit in stories: with markers. To produce story with SG units in a wordless story.	Review all SG units. Tell story using story pictures. Get children to tell story back, using SG markers as prompt.	Hippo Paddle
10 minutes	To produce SG unit in activity: visual cue.	Provide each child with SG marker. Have them produce a component of the story	-SG marker

		(based on their SG marker) to make a silly story.	
10 minutes	To produce story with SG units in a wordless story: with visual cues.	Provide children with story picture sequence. Children will produce a story based on the sequence containing all SG units.	-SG marker -story cards
10 minutes	To produce SG unit in activity: visual cue.	Children will tell stories, using a story starter card to begin the story.	-SG marker -story cards
15 minutes	To produce a story with all SG units.	Provide children with character and setting, and then have them tell the remainder of the story. Adults will write the stories down.	-pens -paper -SG marker
20 minutes		Recess	
10 minutes	To produce a story with all SG units.	Have children tell stories from last activity to the other participants.	
10 minutes	To produce a story with all SG units. To produce SG unit in activity: visual cue.	Child will tell a story. When they produce a SG element, they will be given the corresponding SG marker.	-SG parts -barriers -story cards
10 minutes	To produce SG unit in activity: visual cue. To produce a story with all SG units.	Children will pull setting and character from bags and then complete "silly stories" with problem, attempt and outcome. During this, children will be pulled out individually for during treatment probes.	-story starter sentences X 5 -brown bag
10 minutes	To produce story with SG units in a wordless story.	Story Time. Children will pick one of the Carl stories then "read" to other participants.	Good Dog Carl Carl goes to Daycare Carl Goes Shopping
5 minutes	Behaviour management	Goodbye Song	

Day 8 – 1 hr, 55 minutes			
Time	Goal	Activity	Materials
5 minutes	Behaviour Management	Welcome Song	
10 minutes	To increase understanding of SG units: story.	Story Time	Carl Goes To Daycare.
10 minutes	To associate SG	Review all SG units.	SG Marker

	element with SG marker.		
5 minutes	To produce SG unit in activity: visual cue. To produce a story with all SG units.	Children will tell stories to the group. For each SG element produced, they will be handed the SG marker.	-SG marker
5 minutes	To produce SG unit in activity: visual cue.	Provide each child with SG marker. Have them produce a component of the story (based on their SG marker) to make a silly story.	-SG marker
5 minutes	To increase understanding of SG units: story.	Show children two story pictures and explain cause & effect. Say what happened in both pictures, and then explain why that happened.	-SG cards
10 minutes	To identify missing SG elements in a story.	Children will listen to stories and identify if stories are missing story parts and what story parts are missing.	-stories with missing SG parts
10 minutes	To produce SG unit in activity: visual cue. To produce a story with all SG units.	Children will pull setting and character from bags and then complete "silly stories" with problem, attempt and outcome.	-story starter sentences X 5 -brown bag
10 minutes	To increase understanding of SG units To produce SG unit in activity: without visual cue.	Re-introduce problem to the children. Explain that all stories have problems, but that good stories need to have an attempt too. Brainstorm attempts.	-examples of problems
20 minutes		Recess	
10 minutes	To increase understanding of SG units To produce SG unit in activity: without visual cue.	Present children with real-life problems. Get them to identify what the problem is and brainstorm ideas about how to fix the problems. Relate problems to initiating events.	-jar that won't open, two water containers, pen, sink
10 minutes	To produce a story with all SG units: visual cues.	Child will tell a story to an adult, adult will write the story down.	-SG markers -pens -paper
10 minutes	To produce a story with all SG units.	Children will "read" their stories to other children. Some children will be selected to "act" the stories out.	-stories from previous activities -props
10 minutes	To produce story with	Story Time. Children will pick one of	Good Dog

	SG units in a wordless story.	the Carl stories then "read" to other participants.	Carl Carl goes to Daycare Carl Goes Shopping
5 minutes	Behaviour Management	Goodbye Song	

Day 9 – 1 hr, 5 minutes			
Time	Goal	Activity	Materials
5 minutes	Behaviour Management	Welcome Song	
10 minutes	To increase understanding of SG units: story.	Story Time	Carl Goes To Daycare.
10 minutes	To associate SG element with SG marker.	Review all SG units.	SG Marker
5 minutes	To produce SG unit in activity: without visual cue.	Children will be provided with identical pictures and "characters" to place on boards. The children will not be able to see each other's boards. Children will take turns telling each other where to put characters.	-board -character markers
5 minutes	To produce a story with all SG units. To produce SG unit in activity: visual cue.	Child will tell a story. When they produce a SG element, they will be given the corresponding SG marker.	-SG parts -barriers -story cards
10 minutes	To increase understanding of SG units: story.	Show children two story pictures and explain cause & effect. Have children produce explanations for why the character tried to solve the problem in a story.	Good Dog Carl
10 minutes	To identify missing SG elements in a story.	Children will listen to stories and identify if stories are missing story parts and what story parts are missing.	-stories with missing SG parts
10 minutes	To produce SG unit in activity: visual cue. To produce a story with all SG units.	Children will pull setting and character from bags and then complete "silly stories" with problem, attempt and outcome.	-story starter sentences X 5 -brown bag

Day 10 – 1 hr, 55 minutes			
Time	Goal	Activity	Materials
5 minutes	Behaviour Management	Welcome Song	
10 minutes	To increase understanding of SG units: story.	Story Time	Carl Goes To Daycare.
10 minutes	To associate SG element with SG marker.	Review all SG units.	SG Marker
10 minutes	To produce SG unit in activity: without visual cue.	Children will be provided with identical pictures and "characters" to place on boards. The children will not be able to see each other's boards. Children will take turns telling each other where to put characters. During this task, children will be pulled out for during treatment probes.	-board -character markers
10 minutes	To produce a story with all SG units. To produce SG unit in activity: visual cue.	Child will tell a story. When they produce a SG element, they will be given the corresponding SG marker. During this task, children will be pulled out for during treatment probes.	-SG parts -barriers -story cards
10 minutes	To increase understanding of SG units: story.	Show children two story pictures and explain cause & effect. Have children produce explanations for why the character tried to solve the problem in a story.	Good Dog Carl
10 minutes	To produce a story with all SG units: visual cues.	Child will tell a story to an adult, adult will write the story down.	-SG markers -pens -paper
20 minutes		Recess	
10 minutes	To produce a story with all SG units.	Children will "read" their stories to other children. Some children will be selected to "act" the stories out.	-stories from previous activities -props
10 minutes	To produce a story with all SG units. To produce SG unit in activity: visual cue.	Child will tell a story. When they produce a SG element, they will be given the corresponding SG marker.	-SG parts -barriers -story cards

10 minutes	To produce a story with all SG units. To produce SG unit in activity: visual cue.	Children will each be provided with a SG marker. They will have to produce the part of the story that the SG elements represent, to tell a story as a whole.	-SG markers
15 minutes	To produce story with SG units in a wordless story.	Story Time. Children will pick one of the Carl stories then "read" to other participants.	Good Dog Carl Carl goes to Daycare Carl Goes Shopping
5 minutes	Behaviour Management	Goodbye Song	