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Oral Language and Narrative Abilities of Kindergarten Children

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ORAL LANGUAGE AND NARRATIVE ABILITIES OF KINDERGARTEN
CHILDREN
JENIFFER CRUZ

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
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OF

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Abstract

The primary aim of this study was to explore the relationships between two oral language abilities, syntax/discourse and vocabulary knowledge, with oral narrative performance of kindergarten children from a middle-income population. The study also investigated whether demographic variables (i.e., age, mother's education level, and father's education level) accounted for variance in performance. Kindergarten students ($n = 39$) from two elementary schools were assessed on measures of receptive vocabulary, syntactic skill, and narrative performance. Results of negative binomial regressions hinted at an association between syntax/discourse and narrative ability, regardless of the inclusion of demographic variables. For this sample, students' vocabulary knowledge was not significantly associated with performance on the narrative measure. This study provides some support for focusing on discourse and syntax as areas for instruction and intervention. Implications for future research are discussed.

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CHAPTER 1

Introduction

In recent years, growing attention has been placed on the role of oral language skills in reading achievement, including vocabulary, syntax, and narrative discourse abilities. Studies indicate that oral language skills are associated with reading comprehension as children's reading achievement progresses (e.g., Clarke, Snowling, Truelove, & Hulme, 2010; Foorman, Herrera, Petscher, Mitchell, & Truckenmiller, 2015; Hulme & Snowling, 2011; Kendeou, van den Broek, White, & Lynch, 2009; Nation, Cocksey, Taylor, & Bishop, 2010; Spira, Bracken, & Fischel, 2005). This finding has contributed to interest in whether individual differences in the development of oral language skills prior to literacy instruction predict later reading levels (e.g., Gardner-Neblett & Iruka, 2015; Nation et al., 2010; Oakhill & Cain, 2012; Roth, Speece, & Cooper, 2002; Storch & Whitehurst, 2002). Longitudinal research (Kendeou et al., 2009) has confirmed a significant association between early oral language skills and reading comprehension when the students were in the second grade. Some research has indicated the importance of mastering production and comprehension of oral language skills (i.e., syntactic structures, vocabulary, and narrative discourse) in children at school entry (Scull, 2013), and that syntax and vocabulary may impact narrative skill, thereby indirectly contributing to future comprehension (e.g., Silva & Cain, 2015). However, the strength of the relationships between these skills has not been explored in depth, particularly for middle-income children.

At a young age, children learn to express their wants and needs through narratives, and to respond to others' needs (Paris & Paris, 2003). Initially the narratives are simple,

short and tied to the physical context. The progression to well-developed narrative abilities has been described as going through a series of stages in which requisite syntactical skills increase, the elements of the account become more complete, and children are able to talk not just about the present context, but about other time points as well (Curenton, Craig, & Flanigan, 2008; Curenton & Justice, 2004). By school age, children with well-developed narrative abilities can express personal accounts in an organized, grammatical fashion with enough detail to provide listeners with sufficient information to understand the story (Wellman et al., 2011). Graesser, Millis, and Zwaan (1997) describe discourse as a set of skills used to communicate factual knowledge, beliefs, and emotions in multiple settings.

The breadth of skills entailed in later narrative discourse allows one to focus on future and past events, as well as on unobservable mental states (e.g., he ‘wondered’). Syntax involves the set of rules that dictate word order in a language, and is crucial to listening comprehension (e.g., Brimo, Apel, & Fountain, 2017; Foorman, Koon, Petscher, Mitchell, & Truckenmiller, 2015; Honig, 2007). Although much of the literature has emphasized vocabulary as a predictor of comprehension, syntactic knowledge allows for meaning at the sentence-level; it fosters the understanding of literate language featured in narratives, which are also present in text. In a study by Silva and Cain (2015), the authors examined the effects of certain oral language skills on future comprehension in 4 to 6 year old children. They found that vocabulary significantly predicted current narrative comprehension, but that grammar, inference skills, and literal story comprehension were predictive of reading comprehension one year later. Previous research has recognized the importance of syntax/discourse and vocabulary for listening comprehension (e.g.,

Bowyer-Crane et al., 2008; Whitehurst & Lonigan, 1998), but the unique contributions of syntax/discourse and vocabulary in facilitating narrative skill are uncertain. One of the purposes of this study was to explore this question.

Before describing the proposed study in more detail, background information will be presented. Research on the characteristics of narrative discourse and narrative development will be presented, and findings linking syntax, vocabulary, and narrative abilities with literacy success will be reviewed.

Narrative Discourse

Narrative discourse is a method of communicating stories or events by linking what occurred in a logical, sequential order. For children to produce coherent and cohesive narratives, they must possess an understanding of the two components of narrative discourse, macrostructure and microstructure. Macrostructure, also referred to as story grammar (Stein & Glenn, 1979), refers to features that contribute to the overall organization of the narrative. The elements of the macrostructure include the characters, the setting, actions taken, the initiating event (or ‘problem’) for the narrative, the internal responses (i.e., thoughts and feelings) of the characters, the plan to address the problem, and the consequences, complications, and resolution resulting from the actions (e.g., Klecan-Aker & Caraway, 1997; Moreau & Zagula, 2002). Appendix A describes the macrostructure elements in more detail. The inclusion of these components in a child’s narratives demonstrates the ability to form temporal and causal connections between and among events in the story (Barnes, Kim, & Phillips, 2014). Researchers tend to measure usage of macrostructure by the number of story elements present in a narrative. Children who produce coherent narratives tell stories that are well planned in terms of their overall

structure (Hipfner-Boucher et al., 2015; Liss-Bronstein, 2012). Whereas macrostructure focuses on the general organization and coherence of a narrative, microstructure encompasses the features that make a narrative cohesive.

Microstructure indicates how the components of a story relate to one another at the word and sentence level by use of language features known as cohesive devices (Davies, Shanks, & Davies, 2004; Epstein & Phillips, 2009). Hipfner-Boucher and colleagues (2015) viewed microstructure in terms of its productivity (total number of words), linguistic complexity (mean length of utterances), lexical diversity (number of different words), and grammaticality (total number of utterances considered grammatically correct). Language attributes common in text, known as literate language features, are considered elements of narrative microstructure (Terry, Mills, Bingham, Mansour, & Marencin, 2013); these include adverbs, elaborated noun phrases, mental and linguistic verbs, and conjunctions (Barnes, et al., 2014; Benson, 2009; Curenton & Justice, 2004). They demonstrate syntactic complexity in an individual's oral language, and limited use of literate language can lead to difficulty of identifying and understanding them in text, resulting in poorer comprehension (e.g., Connor et al., 2014). Adverbs describe verbs and adjectives (e.g., slowly); elaborated noun phrases include nouns and the adjectives or determiners that modify them (e.g., big, brown dog); mental and linguistic verbs allow access into the thoughts and emotions of the characters within a narrative (e.g., feel, think); and conjunctions are used to demonstrate temporal and causal associations between phrases (e.g., and, because) (Barnes et al., 2014; Terry et al., 2013; Tompkins, Guo, & Justice, 2013). These features, documented to be present in children

as young as three-years-old (Curenton & Justice, 2004), provide connections between ideas within a story.

Narrative Development

Children's narratives follow a developmental path, with younger children using language to communicate ideas about the immediate environment, whereas older children and adults also express more abstract concepts regarding the past or future (Roth et al., 2002). Moreau and Zagula (2002) describe five stages of narrative skill acquisition: Descriptive Sequence, Action Sequence, Reactive Sequence, Abbreviated Episode, and Complete Episode. Children continue to master story structure components and cohesive elements until they are able to produce a Complete Episode. For the Complete Episode stage, seven and eight year old children will incorporate all of the story grammar elements and cohesive ties from the earlier stages to form a story. The inclusion of these components will provide the structure for a simple plot (Appendix B provides additional information regarding each stage). Stories used in this study were designed by the researcher to represent a Complete Episode. Although children only demonstrate the skill to produce complete, traditional narratives when they reach school age, their earlier narrative abilities may presage later literacy skills (Gardner-Neblett & Iruka, 2015).

Narrative Ability, Syntax, and Vocabulary Linked to Literacy

When individuals engage in a conversation, the speaker can communicate with the listener by using information available in the current setting to aid in the listener's comprehension of the speaker's point. Other qualities such as physical gestures and tone of voice can provide additional clues as to what the speaker means. This type of language is described as contextualized, because of its reliance on the present situation to support

comprehension. More advanced oral narratives, as well as the language used in books and spoken in schools, are characterized by decontextualized language. Unlike contextualized language, decontextualized language does not depend upon nonlinguistic cues or prior knowledge of the listener to express meaning, allowing the speaker to communicate abstract ideas or share thoughts focused on the past or future (Curenton & Justice, 2004; Whitehurst & Lonigan, 1998). Curenton, Craig and Flanagan (2008) suggest that contextualized and decontextualized language lie on opposite ends of a continuum in which early language use begins as contextualized, but gradually shifts toward including decontextualized characteristics when appropriate.

Comprehending written text requires the ability to understand and produce more syntactically and lexically complex sentences to describe events without relying upon the present context (Benson, 2009; Curenton & Justice, 2004; Gardner-Neblett & Iruka, 2015), suggesting links between syntax, narrative discourse abilities, and reading performance (Roth et al., 2002). Curenton and colleagues (2008) propose that ability to use decontextualized language in narrative discourse and for reading comprehension accounts for the relationship observed between the two, and contributes to academic success. They maintain that mastery of decontextualized language is crucial for children's academic success because this language form includes higher-level language skills and vocabulary often found in schools and text (also see Davies et al., 2004; Epstein & Phillips, 2009; Roth et al., 2002).

Some children may struggle with literate language features in school settings if they have not been exposed sufficiently to these language characteristics in their homes (Curenton & Justice, 2004). Age-related differences also contribute to the use of literate

language features, as shown in a study by Curenton and Justice (2004), in which they tested preschoolers' from ages 3 to 5 on the presence of oral narrative features. They found that although all children produced literate language features, significant differences were present between age groups for the use of conjunctions and of mental and linguistic verbs. The ability to correctly identify and produce literate language features has been related to syntactic knowledge (Connor et al, 2014), and has been shown to correlate with reading comprehension in both children and adolescents (Griffin, Hemphill, Camp, & Wolf, 2004; Brimo, Apel, & Fountain, 2017).

Various components involved in understanding language contribute to reading, including listening comprehension, syntax, phonological awareness, and vocabulary (Foorman et al., 2015). Vocabulary, a commonly measured component of oral language, has been shown to influence literacy achievement (e.g., Chall, 1996; Chall & Jacobs, 1983; Perfetti, 1985). Deficits in vocabulary knowledge in children from lower socioeconomic backgrounds have contributed to a decline in reading performance, particularly in the middle elementary grades when there is a reliance on comprehension (e.g., Adlof, McLeod, & Leftwich, 2014; Hoff, 2013). Some researchers have investigated the role of vocabulary knowledge in other aspects of oral language to determine if there is a potential indirect effect. Specifically, a significant relationship between receptive vocabulary and narrative comprehension in young children has been suggested (Lynch et al., 2008; Silva & Cain, 2015; Tompkins et al., 2013), although the nature of this relationship when considering other oral language features (i.e., syntax/discourse) remains unclear.

Purpose of the Study

The study explored the associations of syntax/discourse and vocabulary performance with the narrative abilities of kindergarten children from middle-class backgrounds. It may be beneficial to provide further evidence regarding the correspondence of oral language skills for narrative performance, given evidence that narrative skills are predictive of reading comprehension (Silva & Cain, 2015; Storch & Whitehurst, 2002; Griffin et al., 2004). In turn, if syntax and vocabulary are central to narrative skills, assessment of these domains could identify necessary areas for instruction and intervention.

Research has examined syntax in children identified with Specific Language Impairment (SLI; e.g., Bishop & Snowling, 2004; Epstein & Phillips, 2009). The language development of typically-developing children from lower-income backgrounds has been gaining attention in the literature (e.g., Adlof et al, 2014; Fish & Pinkerman, 2003; Reynolds & Fish, 2010), but fewer studies have examined the role of vocabulary, syntactic and narrative abilities in middle-income populations. This emergent area of study could illuminate the particular deficits children may have when experiencing reading problems, and thereby identify specific areas in need of intervention. In addition, although literate language features are characteristic of narrative structure and school language, it is often not focused on as an area in need of intervention, particularly in nonclinical populations (Connor et al., 2014). In an attempt to test the efficacy of interventions designed to ameliorate difficulties in language and reading comprehension, Connor and colleagues (2014) offer preliminary findings suggesting the importance of targeted oral language interventions for improving production and comprehension of

syntactic structures in text for early elementary school students. A small-group intervention conducted by Phillips (2014) demonstrated the potential impact of improving syntactic ability that could also lead to improvement of comprehension skills in young children entering school.

The Index of Narrative Complexity, the narrative measure selected for this study, assesses both macrostructure and microstructure to capture children's understanding of story grammar and syntax ability. Additionally, the general oral language measure (Fluharty-2) includes several subtests that rely heavily on syntax and discourse.

Therefore, the purpose of this study was to determine if an oral language screening measure and vocabulary measure are predictive of narrative performance. The study aimed to test the following hypotheses:

- 1) Scores on the measures of syntax/discourse (i.e., The Fluharty-2) and of receptive vocabulary knowledge (i.e., the Peabody Picture Vocabulary Test – IV) positively predict narrative performance on the Index of Narrative Complexity.
- 2) Scores on the syntax/discourse and vocabulary measures positively predict narrative performance after taking into account certain demographic variables (i.e., age, mother's education level, and father's education level).

CHAPTER 2

Methods

Participants

Participants were recruited from four kindergarten classes in two predominantly middle-class elementary schools in Rhode Island. A total of 44 students were evaluated for the study. One child turned seven years old during the time of the study and hence did not fall within the age-norms for the Fluharty-2 measure, so this participant's data were excluded from the analyses. Additionally, it was discovered that there were three children from mixed language backgrounds, who had significantly lower scores compared to the rest of the sample. To avoid a possible confound with the research questions being investigated, inclusion was limited to monolingual English speakers. As a result, there were 40 participants included in the final analyses ($M_{age} = 6.13$ years, $SD = .33$). The sample consisted of 24 females (60%) and 16 males (40%). For the mothers of the children assessed, 10% had a high school degree or equivalent, 22.5% had attended some college, and 67.5% had obtained a college degree or higher. With regard to father's education level, 2.5% had completed some high school, 10% had completed high school or an equivalent degree, 30% had completed some college, and 55% had obtained a college degree or higher. One background form was returned with no report of the father's education level, so this was categorized as missing.

Although children were tested in two separate sessions and the interval between these sessions varied. Therefore, age at the child's first session was included as a variable.

Measures

Fluharty Preschool Speech and Language Screening Test – Second Edition.

This measure is designed to assess general oral language abilities of children between ages 3 years to 6 years and 11 months. It is comprised of five subtests: 1) Articulation, 2) Repeating Sentences, 3) Responding to Directives and Answering Questions, 4) Describing Actions and 5) Sequencing Events. These subtests, particularly the last four that tap syntax and discourse require skills closely associated with those necessary to produce narratives. The standard scores of the latter four subtests can be used to determine the General Language Quotient (GLQ), a composite score that was used in statistical analyses for the study. The Fluharty-2 demonstrates adequate reliability, with correlation coefficients for the subtests ranging from .70 to .90, and language quotients averaging between .84 and .91 (Fluharty, 2001). The Articulation subtest was omitted for this study.

Index of Narrative Complexity (INC). The INC is a criterion-referenced measure designed to assess narrative macrostructure and microstructure for stories consisting of complete episodes. In previous research in which the INC was used as a progress-monitoring tool, the INC correlated from .60 to .83 with the Test of Narrative Language, indicating validity, and demonstrated reliability across various story elicitation contexts, again with correlations ranging from .60 to .90 (Petersen, Gilliam, & Gilliam, 2008; Liss-Bronstein, 2012). This measure allows for an examination of specific story grammar elements (i.e., macrostructure features) that are coded on a 0-3 point scale (i.e., Character, Initiating Event, Plan, Consequence) or a 0-2 point scale (i.e., Setting, Internal Response, Action, Complication) based on their presence in the narrative (see Appendix

C). The scale is weighted to highlight the importance of specific narrative elements indicative of developmental progress. Additionally, microstructure features are scored based on the presence of formulaic markers (words that signify the start or end of a narrative), temporal markers (words that reference time), causal adverbial clauses (words used to connect causally linked phrases), knowledge of dialogue (statement made by a character), and narrator evaluations (words expressed to justify a character's actions within the story). The points for each student were totaled to create an INC score for each story; these raw scores were used in analyses for the study.

For the INC task, two stories were created for the study (see Appendix D) that constituted complete episodes as specified by Moreau (2009). The maximum number of points attainable for INC Story A and Story B were 27 and 28 points, respectively. The stories were recorded for presentation purposes. Likewise, the retellings of the stories were recorded and transcribed for subsequent scoring. Two coders independently scored the retell of each story by each student and compared scores. When discrepancies in scoring occurred, the two coders discussed them and came to an agreement on the final score.

Peabody Picture Vocabulary Test – Fourth Edition (PPVT-IV). This instrument is a standardized measure of receptive vocabulary. On each trial, children are shown four pictures simultaneously and asked to choose the picture that corresponds to the word given by the examiner. Testing continues until the child misses eight out of twelve items in a set. The reliability coefficients reported for the PPVT-IV range from .87 to .93, indicating good reliability. For analyses conducted for the study, raw scores were converted to standard scores.

Procedure

Prior to data collection, approval for this study was obtained from the University of Rhode Island's Institutional Review Board. The district superintendent and principals of both schools granted permission for students to participate in the study, providing approval letters before data collection began. Two undergraduate research assistants were recruited to assist in collecting, scoring, and entering data. The assistants obtained CITI Human Subjects Research Training certification and were trained by the primary researcher in eight one-hour sessions to administer the three measures with fidelity prior to engaging with participants. All parents received two forms as part of the consent process. A Study Information form (Appendix E) described the purpose and nature of the proposed study and included a section that parents were instructed to sign if they wished to decline participation by their child. If they were willing to have their child take part in the study, they were asked to sign and complete the second form (Background Information form; Appendix F), thereby providing implicit agreement. The Background Information form asked parents to list the number of adults living in the child's home, the primary language spoken at home, and the educational levels of the child's parent(s) or guardian(s). To encourage return of the consent forms, regardless of whether the parents declined or agreed to participation by their child, all students who returned a consent form received an incentive (i.e., colorful pencil) for doing so. Children who returned the Background Information form signed and completed by a parent or guardian were included in the study.

Each child was assessed during two testing sessions that typically took place on two separate days by either the primary researcher or an undergraduate research assistant.

Each session lasted approximately 15-20 minutes. The examiner obtained verbal assent from each participant before beginning the assessments. In one session, the child completed the PPVT-IV and an INC story retell task, and in the other session, the child completed the Fluharty-2 and the other story retell task for the INC. The two stories were presented to the participants in random order. That is, if a child heard Story A in their first session, then Story B was presented in the second session, and vice versa.

CHAPTER 3

Results

Preliminary Analyses

Preliminary analyses were conducted to examine descriptive statistics for the Fluharty-2, PPVT-IV, and INC measures for the participants. In the process of conducting analyses, concerns arose about lack of engagement on the INC tasks for some of the students. One child earned a score of zero on both stories and was dropped from the sample, leaving 39 students. Six students appeared to be engaged on one of the story tasks, but not on the other. Descriptive statistics are presented for the total sample of 39 students (Table 1a) and for a subset of children who were at least minimally engaged (i.e., scored at least one point) on both of the INC measures ($n = 33$; Table 1b). Standard scores for the Fluharty-2 GLQ show average syntax and discourse skills for this sample, though scores on the PPVT-IV suggest strong background language experiences.

Table 1a. *Descriptive Statistics for the PPVT-IV, Fluharty-2 GLQ, INC Story A Total, and INC Story B Total for All Participants ($n = 39$)*

<i>Measure</i>	<i>Mean</i>	<i>SD</i>	<i>Minimum</i>	<i>Maximum</i>
PPVT-IV	121.77	11.43	98	143
Fluharty-2 GLQ	95.28	5.83	85	105
INC - Story A Total	9.13	5.28	0	17
INC - Story B Total	9.08	6.70	0	21

Table 1b. *Descriptive Statistics for the PPVT-IV, Fluharty-2 GLQ, INC Story A Total, and INC Story B Total for Engaged Participants ($n = 33$)*

<i>Measure</i>	<i>Mean</i>	<i>SD</i>	<i>Minimum</i>	<i>Maximum</i>
PPVT-IV	123.06	11.14	98	143
Fluharty-2 GLQ	94.76	5.96	85	105
INC - Story A Total	9.42	4.75	1	16
INC - Story B Total	8.85	6.07	1	21

Note: Standard scores of PPVT-IV and the Fluharty-2 GLQ and raw scores for the INC Stories were used for analyses. Maximum number of points attainable for INC Story A and Story B were 27 and 28 points, respectively.

The data also were reviewed to see if they meet necessary assumptions for parametric analyses. Data for each INC story was examined separately and only included participants who were minimally engaged on each task. Skewness of $-.36$ ($SE = .38$) and kurtosis of -1.19 ($SE = .75$) was shown for Story A, and skewness of $.44$ ($SE = .38$) and kurtosis of $-.81$ ($SE = .75$) for Story B. As can be seen in Figures 1.1 and 1.2, these histograms of the distributions of total scores for the INC Story A and Story B likewise reflect non-normality of the data.

Figure 1.1 Frequency Distribution of INC Story A Scores for Engaged Participants ($n = 37$)

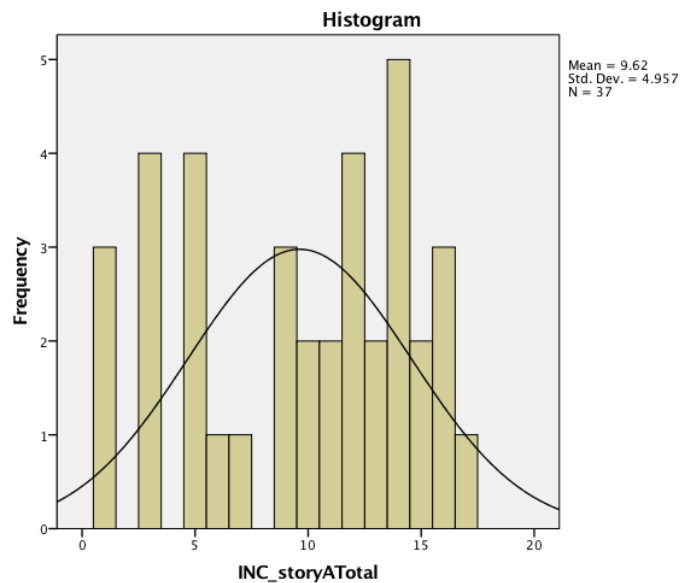
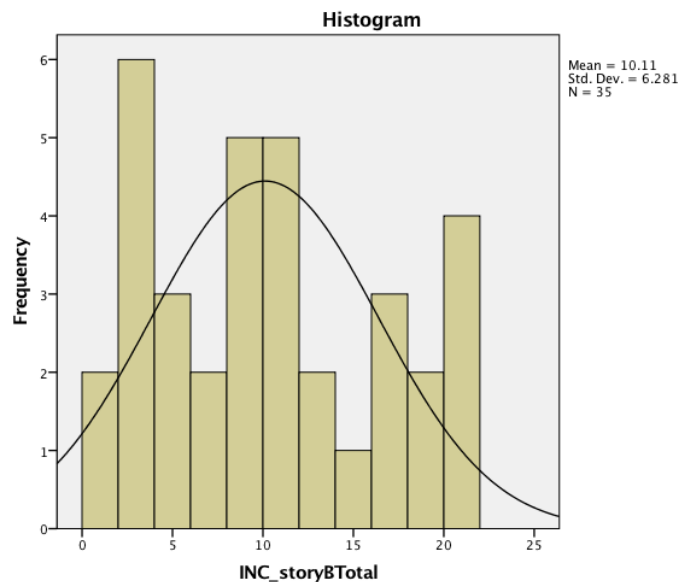


Figure 1.2 Frequency Distribution of INC Story B Scores for Engaged Participants ($n = 35$)



For subsequent analyses, a Poisson regression was considered in order to model count data for the INC stories, but because of overdispersion of the data (i.e., variance greater than the mean), negative binomial regressions¹ were used for the primary and secondary analyses. Correlation analyses were conducted for all demographic and language measures for the participants engaged in each story (see Tables 2a and 2b). For INC Story A, the analyses showed positive correlations between mother's education level and father's education level ($r = .65, p < .001$), mother's education level and the PPVT-IV ($r = .36, p < .05$), and father's education with Story B total score ($.39, p < .05$).

Negative correlations were found for mother's education and Story A total score

¹ Negative binomial regressions are used for modeling over-dispersed count variables that contain nonnegative integers (Gardner, Mulvey, & Shaw, 1995). They loosen the restriction of Poisson regressions by allowing for a variance larger than the mean. Negative binomial regressions conduct a log transformation of the dependent variables; therefore, a one-unit increase in the predictor variable corresponds to a log (x) increase in the dependent variable, which is indicated by the regression coefficient estimate.

($-.38, p < .05$) and father's education and Story A total score ($-.45, p < .01$). For INC Story B, only mother's education level and father's education level were positively correlated ($r = .65, p < .001$). Similar to Story A, negative correlations were found between mother's education and Story A total score ($-.33, p < .05$) and father's education and Story A total score ($-.34, p < .05$).

Table 2a. *Correlation Analyses for Measures and Demographic Characteristics of Participants Engaged in Story A (n = 37)*

Variables	1	2	3	4	5	6	7
1. Age	–						
2. Mother's Education Level	-.07	–					
3. Father's Education Level	-.18	.65***	–				
4. Fluharty-2 GLQ	.21	.13	.18	–			
5. PPVT-IV	-.15	.36*	.28	.00	–		
6. INC Story A Total Score	.26	-.38*	-.45**	.05	-.20	–	
7. INC Story B Total Score	.00	.06	.39*	.16	.00	.28	–

***Correlation is significant at $p < .001$ level, ** at $p < .01$ level, * at $p < .05$ level

Table 2b. *Correlation Analyses for Measures and Demographic Characteristics of Participants Engaged in Story B (n = 35)*

Variables	1	2	3	4	5	6	7
1. Age	–						
2. Mother’s Education Level	.01	–					
3. Father’s Education Level	-.03	.55***	–				
4. Fluharty-2 GLQ	.13	.17	.32	–			
5. PPVT-IV	-.08	.25	.03	.05	–		
6. INC Story A Total Score	.23	-.33*	-.34*	-.07	-.14	–	
7. INC Story B Total Score	.08	.01	.17	.28	-.20	.21	–

***Correlation is significant at $p < .001$ level, ** at $p < .01$ level, * at $p < .05$ level

Main Analyses

The central focus of the study was to investigate the relationships between performance on retelling of stories and on oral language measures (i.e., syntax/discourse and vocabulary). Secondly, a goal was to examine whether demographic variables accounted for variance in performance. To examine the effects of the predictors on the two INC stories and preserve power because of the small sample size, regression analyses were conducted with each story serving as the dependent variable. As noted earlier, in preliminary analyses it was noted that several participants earned total scores of zero on the story recall task. Of the seven participants who earned zero points on either INC Story A or B, one pupil was dropped because of zero scores on both stories, as noted

above. The remaining six scored either near or over one standard deviation above the mean for the other story presented. It was decided to exclude the data for these six participants from the one story recall task on which they earned no points and to retain their data for the other story. Thus, participants who earned a total score of zero in either story (Story A: $n = 2$; Story B: $n = 4$) were excluded from the analyses for that story, whereas those who scored at least one point (Story A: $n = 37$; Story B: $n = 35$) were considered “engaged” during testing, and thus were included. Order of story presentation did not appear to be a factor in the engagement of participants. The demographic characteristics of participants with a score of zero (i.e., not engaged) for Story A or Story B seemed unremarkable, although only one father had earned a college degree or higher (Table 3).

Table 3. *Demographic Characteristics of “Not Engaged” Participants ($n = 6$)*

<i>Participant</i>	<i>Story A Total</i>	<i>Story B Total</i>	<i>Story Presented First</i>	<i>Mother’s Education Level</i>	<i>Father’s Education Level</i>	<i>Age (in years)</i>
1	0	21	A	6	5	6.06
2	0	16	B	6	6	5.90
3	14	0	A	5	4	5.98
4	13	0	B	6	5	6.52
5	1	0	A	6	5	6.17
6	17	0	A	4	3	6.80

Education levels: 3 = some high school; 4 = high school graduate; 5 = some college or technical school; 6 = college graduate

Ultimately, two negative binomial regression models were conducted for each story: 1) “engaged” participants on language measures but without demographic variables; and 2) “engaged” participants on both language measures and with demographic variables.

Hypothesis 1

It had been hypothesized that the two oral language measures of vocabulary and grammar would be predictive of the narrative retell scores. To test this, a negative binomial regression was conducted to predict the INC Story A total score using the scores on the PPVT-IV and the Fluharty-2 GLQ. For Story A, regression analysis did not display significant effects for either the PPVT-IV ($p = .13$) or GLQ ($p = .33$). Regression analyses for INC Story B likewise yielded no significant effects of the PPVT-IV ($p = .22$), though the GLQ approached significance ($p = .055$). (See the left side of Tables 4 and 5 for the regression coefficients, standard errors, and p values for the models of the language measures associated with INC Story A and with INC Story B.) Results of the current study did not support the hypothesis regarding the predictive value of the vocabulary measure on narrative performance for this sample; however, it may indicate a possible influence of syntactic ability, but only for Story B.

Hypothesis 2

A second set of regression analyses was used to determine if vocabulary and oral language measure scores predicted narrative retell scores when demographic variables were taken into consideration (i.e., participant's age, mother's education level, father's education level)². (See the right side of Tables 4 and 5 for the regression coefficients, standard errors, and p values for the models of the language measures plus the demographic variables associated with INC Story A and with INC Story B.) As for the first set of regression analyses, for Story A, the PPVT-IV ($p = .60$) and GLQ ($p = .27$)

² Education levels were coded as follows: 1 = never attended school or only attended kindergarten; 2 = Grades 1 through 8 (elementary); 3 = Grades 9 through 11 (some high school); 4 = Grades 12 or GED (high school graduate); 5 = college 1 year to 3 years (some college or technical school); 6 = college 4 years or more (college graduate)

again were not significant predictors. Likewise, for Story B, a significant relationship occurred for the GLQ ($p = .04$) though not with the PPVT-IV ($p = .47$). This indicates that for every one-unit increase in the GLQ, the INC Story B total score would increase by 3.4 units. Similar to the first hypothesis, results suggest an impact of syntax, but not vocabulary knowledge, on narrative performance. Again, this significant relationship was seen for Story B but not Story A.

Table 4. Results from Negative Binomial Regression Models Predicting INC Story A Total Scores

Variable	Without Demographic Variables			With Demographic Variables		
	Estimate	SE	Pr(> z)	Estimate	SE	Pr(> z)
Engaged Students (n=37)						
PPVT-IV	.00	1.84	.13	.00	.00	.60
GLQ	.00	.01	.33	.01	.01	.27
Age	-	-	-	.26	.26	.31
Mother Education	-	-	-	-.11	.17	.50
Father Education	-	-	-	-.21	.14	.12

Table 5. Results from Negative Binomial Regression Models Predicting INC Story B Total Scores

Variable	Without Demographic Variables			With Demographic Variables		
	Estimate	SE	Pr(> z)	Estimate	SE	Pr(> z)
Engaged Students (n=35)						
PPVT-IV	-.01	.00	.22	.00	.01	.47
GLQ	.03	.01	.05	.03	.01	.04*
Age	-	-	-	.14	.33	.66
Mother Education	-	-	-	.03	.23	.88
Father Education	-	-	-	.11	.21	.59

* Denotes significance at $p < .05$ level

CHAPTER 4

Discussion

The primary aim of this study was to explore the predictive value of two components of oral language, vocabulary and syntax/discourse, on narrative ability in middle-class kindergarten students. Although the role of certain facets of oral language for language and literacy performance have been examined in children identified with language impairments, less attention has been placed on children who are typically developing. Toward that purpose, children were assessed in two sessions with a vocabulary measure (PPVT-IV), a measure of syntax/discourse abilities (Fluharty-2), and two narrative recall tasks (INC Stories A and B). The results of negative binomial regressions indicate that scores on the vocabulary and syntax/discourse measures did not significantly predict scores on Story A or Story B, although the role of syntax/discourse approached significance for Story B. Similarly, when demographic characteristics (i.e., age, mother's and father's education levels) were added to the regression analyses along with the oral language measures, there again were no significant effects of this set of measures on Story A scores, but a significant effect of the syntax/discourse measure on Story B scores.

These findings suggest a possible effect of syntax and discourse for this sample, but not vocabulary knowledge, on narrative ability, regardless of inclusion of demographic variables. It is not clear why a significant effect was found for Story B, but not for Story A. Results of a paired t-test found no significant differences between performances on the two stories; the small sample size could have increased the impact of minor differences between the stories, resulting in a difference between the outcomes.

Additionally, the lack of significant effects of vocabulary knowledge on either story recall task was somewhat surprising given that previous research repeatedly has shown positive effects of vocabulary knowledge on comprehension (e.g., Catts, Adlof, Weismer, 2006; Nation et al., 2010; Vellutino, Tunmer, Jaccard, & Chen, 2007). The overall sample in this study demonstrated high vocabulary scores ($M = 121$; $SD = 11$). It is possible that a broader range of vocabulary scores may be necessary to discern the deleterious effects of lower vocabulary scores on narrative and comprehension scores.

This study extends previous research by providing some evidence supporting the concept of overlapping linguistic processes contributing to oral language abilities and to reading, both directly and indirectly (Connor et al., 2014). In line with the connection proposed between syntax/discourse knowledge, specifically the use of literate language features, and narrative ability (Barnes, et al., 2014; Benson, 2009; Bishop & Snowling, 2004; Cumenton & Justice, 2004; Connor et al., 2014), this study suggests a possible, though weak, relationship between these aspects of oral language. Although vocabulary has often been cited as an indicator of listening and reading comprehension (e.g., Oakhill & Cain, 2012), syntax/discourse skills might also contribute to comprehension earlier in childhood. Because the measure used to assess syntax and discourse also relied upon semantic knowledge, it could emphasize the importance of this set of skills for early narrative ability, prior to reading instruction.

The results of this study offer some indication that in addition to instructional strategies that emphasize training in phonological awareness and phonics to build reading skills, there also may be oral language skills that should be targeted if difficulties with listening and reading comprehension exist. In fact, weaknesses that are not remedied in

early childhood may continue to be present throughout adolescence if not addressed, as demonstrated by Brimo, Apel, & Fountain (2017) in their examination of syntactic knowledge and its contribution to reading comprehension.

Limitations

Sample Size. Several limitations may have had an impact on the findings from this study. One limitation was the small sample. A larger sample would have allowed for a more accurate representation of kindergarten students, therefore making results more generalizable to children at school entry. Additionally, the sample was comprised of a relatively homogenous group of students regarding demographic characteristics. The participants included came from two schools in the same school district with fairly homogenous socioeconomic backgrounds. This could explain the limited variance of the language measures in this sample; seeking a broad array of socioeconomic backgrounds would increase the variance in language skills and could help shed light on the role of these language skills for narrative ability.

Measures. The measures used for this study were chosen to examine vocabulary, syntax/discourse, and narrative ability. In terms of limitations the vocabulary and narrative ability measures will be critiqued here. As mentioned earlier, the children in the current sample demonstrated high oral language function, particularly in vocabulary. In addition to seeking a broader sample of children with more diverse oral language skills, it also may have been a limitation that a receptive vocabulary measure was used. Although measures of receptive vocabulary often are used in studies of language and literacy, an expressive measure may have been more sensitive to individual differences in vocabulary, thereby illustrating more clearly its effects on narrative skill.

The INC task was originally designed as a progress-monitoring tool for documenting improvements during narrative interventions. Although it included both macrostructure and microstructure elements and their varying levels of complexity, scoring for the INC was challenging. Scores for the INC were difficult to differentiate in terms of their meaningfulness in assessing narrative ability. Comparable number of points could be earned, but yet may not accurately reflect similar skill in story grammar expertise. For example, a score of 3 could be earned by a child stating, “Once upon a time there was a boy named Sam,” or by “When he first tried to tie his shoes he noticed that he couldn’t tie them.” According to developmental stages proposed by Moreau and Zagula (2002), these two statements might reflect children at different levels of narrative understanding, yet on the INC they earn the same number of points on the INC. Developing a new tool to assess narrative production and comprehension according to developmental stage, may be warranted. Additionally, the stories used for the retell tasks were created for the purposes of this study. Minor differences between the structure of the stories may have accounted for the discrepancy between the relationships seen for Story A and Story B. Future research should focus on developing stories with adequate reliability to be used with the INC. Difficulties in scoring also arose when children apparently recalled certain parts of the story, but did not effectively express this in their reiteration, raising the question of whether memory factors determined performance rather than the children’s knowledge of story grammar and microstructure elements.

As noted in the results, concerns regarding children’s lack of engagement led to the decision to omit data from analyses for Story A and/or Story B for children who were not engaged. Several studies have included the use of a visual aid, such as a picture book

(e.g., Epstein & Phillips, 2009), to provide additional assistance for children to follow along more closely with the story and use the pictures to prompt responses. The use of pictures during the reading of the story in these studies may have kept children engaged enough in order to provide more details during the recall portion of the task. In future use, incorporating pictures corresponding with each story is recommended both to engage children more and minimize memory demands during the task.

Further, in the present study when students' answers seemed limited, examiners asked a general question to see if children could provide more information. But more specific questions by an examiner following the student's first effort at retelling might help elicit what the child has gleaned from the story. These questions may also provide pertinent information regarding children's understanding of story grammar, as it could indicate their ability to recognize parts of the story even if they had difficulty retelling it.

Closing Remarks

In short, this study examined the relationships between several oral language components (i.e., vocabulary, syntax/discourse, narrative ability) with a small sample of middle-class kindergarten students. The results showed some association between syntax/discourse performance and children's narrative retelling skills. Future studies in this area should include larger and more diverse samples of students to allow for a wider distribution of scores; doing so may be more sensitive to individual differences in grammar/discourse and vocabulary, allowing better examination of the relationship between these skills and narrative ability. In addition, increasing the range of socioeconomic circumstances of participants may offer greater insights by expanding the variance in language and literacy skills. As noted earlier, previous studies have reported

that children from lower-income homes have lower levels of language development than their peers from more economically advantaged homes, starting from a young age (e.g., Arriaga, Fenson, Cronan, & Pethick, 1998; Fernald, Marchman, & Weisleder, 2013; Hart & Risley, 1995; Hoff, 2013; Hoff & Tian, 2005). Further, in future studies, it would help to modify INC administration and scoring procedures to more accurately assess children's story grammar knowledge and use of microstructure elements.

Continued examination of children's oral language skills at school entry is needed to identify potential strengths and weaknesses that may impact both listening and reading comprehension. In turn, this may suggest pertinent interventions for those students with oral language deficits, potentially enhancing their subsequent reading success.

Appendix A

Macrostructure Elements

Element	Description
Character	Subject of a clause in a narrative
Setting	A place or time in a narrative
Initiating Event	An event or problem that provokes a response from a character
Internal Response	Information about a character's psychological state (i.e. feelings, thoughts, wants)
Plan	A cognitive verb intended to act on or solve an initiating event
Action	Attempts taken by characters that are not directly related to the initiating event
Complication	An event that prohibits the execution of a plan or action taken in response to an initiating event Can also be a second initiating event
Consequence	Does or does not resolve the problem Must be related to the initiating event Must be explicitly stated

(Klecan-Aker & Caraway, 1997; Petersen, Gilliam, & Gilliam, 2008)

Appendix B

Stages of Narrative Development

Stages of Development	Descriptions	Approximate Age
Stage 1: Descriptive Sequence	<ul style="list-style-type: none"> • Children are able to tell stories that label and describe characters and actions within the setting. • Actions are mentioned as part of a theme, but not in sequence. • Children can comprehend stories involving characters and settings. • Cohesive tie: and 	3-4 years old
Stage 2: Action Sequence	<ul style="list-style-type: none"> • Children dictate stories with a sequence of actions in a particular setting. • Children can comprehend stories involving characters, settings, and a sequence of actions. • A theme is present, but not a plot. • Cohesive ties: first, next, finally 	3-4 years old
Stage 3: Reactive Sequence	<ul style="list-style-type: none"> • Children can tell stories using an initiating event and a reaction. • Children can comprehend stories involving characters, settings, an initiating event, and a reaction. • Marks beginning of cause and effect chain; a plot begins to take shape • Cohesive ties: but, so, and so, if/then 	4-5 years old
Stage 4: Abbreviated Episode	<ul style="list-style-type: none"> • Transition stage that focuses on feelings and planning instead of descriptions, actions, and reactions • Children begin to relate internal responses to the initiating event • The initiating event becomes central focus, and complicates situations for the characters involved • A simple plan may be stated • The reaction is now a consequence • Cohesive ties: because 	5-6 years old
Stage 5: Complete Episode	<ul style="list-style-type: none"> • Children tell a complete episode including all of the story grammar components and a variety of cohesive ties. Comprised of a beginning, middle, and end of the story 	7-8 years old

(Moreau & Zagula, 2002)

Appendix C

Index of Narrative Complexity Story Coding Form

Index of Narrative Complexity Story Coding Form				
Narrative Element	0 POINTS	1 POINT	2 POINTS	3 POINTS
<p>Character</p> <p><i>A character is any reference to the subject of a clause in a narrative.</i></p>	<p>No main character is included, or only ambiguous pronouns are used.</p> <p>Examples</p> <p>a) <u>They</u> were walking.</p> <p>b) <u>He</u> was walking.</p>	<p>Includes at least one main character with non-specific labels only.</p> <p>Note: Only code each character one time.</p> <p>Examples</p> <p>a) “Once there was a <u>boy</u>.”</p> <p>b) “<u>The boy</u> was walking.”</p>	<p>Includes one main character with a specific name for the character.</p> <p>Examples</p> <p>a) “Once there was a <u>boy named Charles</u>.”</p>	<p>Includes more than one main character with specific names.</p> <p>Examples</p> <p>a) “Once there was a <u>boy named Charles and a girl named Mary</u>.”</p>
<p>Setting</p> <p><i>A setting is any reference to a place or time in a narrative.</i></p>	<p>No reference to a specific or general place.</p> <p>Examples</p> <p>a) “<u>The boy and the girl</u> were walking.”</p>	<p>Includes reference to a general place or time.</p> <p>Examples</p> <p>a) “<u>The boy and the girl</u> were outside.”</p> <p>b) It was <u>daytime</u>.</p> <p>c) <u>One day</u>, they went to the park.</p>	<p>One or more references to specific places or times.</p> <p>Examples</p> <p>a) “Once there was a boy and a girl walking in <u>central park</u>.”</p> <p>b) They were walking at <u>10:00</u> at night.</p>	

Narrative Element	0 POINTS	1 POINT	2 POINTS	3 POINTS
<p>Initiating Event</p> <p><i>An initiating event is any reference to an event or problem that elicits a response from the character(s) in a narrative.</i></p>	<p>An event or problem likely to elicit a response from a character is not stated.</p> <p>Examples</p> <p>a) <i>The girl looked at the boy. The boy and girl were walking in the park.</i></p>	<p>Includes at least one stated event or problem that is likely to elicit a response from a character, but there is no response directly related to that event.</p> <p>Examples</p> <p>a) <i>“The girl was walking in a park and saw a spaceship land (event/problem) and she saw some aliens, and she saw a dog, and a table and....”</i></p>	<p>Includes at least one stated event or problem that elicits a response from the character(s).</p> <p>Examples</p> <p>a) <i>“The girl was walking in a park and saw a spaceship land and she saw some aliens (IE). The girl started to run away (Action).”</i></p>	<p>Two or more distinct stated events or problems that elicit a response from the character(s).</p> <p>Examples</p> <p>a) <i>“The girl was walking in a park and saw a spaceship land and she saw some aliens (IE-1). The girl started to run away (Action). But while she was running, her shoe got stuck in a hole (IE-2). She quickly knelt down and took off her shoe to get unstuck (Action).”</i></p>
<p>Internal Response</p> <p><i>An internal response is any reference to information about a character’s psychological state including emotions, desires, feelings, or thoughts.</i></p>	<p>No overt statement about a character’s psychological state.</p>	<p>One overt statement about a character’s psychological state not causally related to an event or problem.</p> <p>Examples</p> <p>a) <i>“The dog was sad, the girl was happy.”</i></p>	<p>One or more overt statements about a character’s psychological state causally related to an event or problem.</p> <p>Example</p> <p>a) <i>“The aliens’ landed. Sara saw the ship and was terrified.”</i></p>	

Narrative Element	0 POINTS	1 POINT	2 POINTS	3 POINTS
<p>Plan</p> <p><i>A plan is any cognitive verb reference that is intended to act on or solving an initiating event.</i></p> <p><i>It must include a “cognitive verb” that indicates a plan.</i></p> <p><i>Note: The plan and the Action/Attempt can share the same clause (see 2 POINTS example b)</i></p>	<p>No overt statement is provided about the character’s plan to act on or solve the event or problem.</p> <p>Examples</p> <p><i>a) The girl was very excited and she ran out to meet the aliens.</i></p>	<p>One overt statement about how the character might solve the complication or problem.</p> <p>Examples</p> <p><i>a) “The girl thought that it would be neat to go and meet the aliens.”</i></p>	<p>Two overt statements about how the character might act on or solve the event(s) or problem(s).</p> <p>Examples</p> <p><i>a) “The girl was very excited and she told the boy that <u>she wanted to go meet the aliens.</u>”</i></p> <p><i>b) “The boy was very scared so he decided to sneak away quietly.”</i></p>	<p>Three or more overt statements about how the character might act on or solve the event(s) or problem(s).</p>
<p>Action</p> <p><i>Actions are taken by the main characters but are not directly related to the IE.</i></p> <p><i>Attempts are taken by the main character(s) that are directly related to the IE.</i></p>	<p>No actions are taken by the main character(s).</p> <p>Examples</p> <p><i>a) There is a girl. There is a boy. It is sunny.</i></p>	<p>Actions by main character are not directly related to the IE.</p> <p>Examples</p> <p><i>a) “The boy and the girl were walking in a park.</i></p> <p><i>b) “They saw a boy alien <u>waving.</u>”</i></p>	<p>Attempts by main character are directly related to the IE.</p> <p>Examples</p> <p><i>a) “The girl thought that it would be neat to go and meet the aliens so <u>she got away from the boy and walked out on the grass.</u>”</i></p>	

Narrative Element	0 POINTS	1 POINT	2 POINTS	3 POINTS
<p>Complication</p> <p><i>A complication is an event that prohibits the execution of a plan or action taken in response to an initiating event.</i></p> <p>Note: <i>A complication can also be a second initiating event. In this case code both a complication and initiating event.</i></p>	<p>No complications.</p>	<p>One complication that prohibits a plan or action from being accomplished.</p> <p>Example</p> <p><i>a) The spaceship landed. The girl decided to get away from the aliens and started running from the spaceship. While she was running, <u>her shoe got stuck in a hole</u>. She could not get away from the aliens.”</i></p>	<p>Two distinct complications that prohibit plans or actions from being accomplished.</p> <p>Examples</p> <p><i>“The girl was walking in a park and saw a spaceship land and she saw some aliens (IE-1). The girl started to run away (Action-1). But while she was running, her shoe got stuck in a hole (Complication-1 / IE-2). She quickly knelt down and took off her shoe to get unstuck (Action-2) but she was shaking too much to get her shoe off (Complication-2).”</i></p>	

Narrative Element	0 POINTS	1 POINT	2 POINTS	3 POINTS
<p>Consequence</p> <p><i>A consequence resolves the problem or does not resolve the problem. It must be related to the IE and explicitly stated.</i></p> <p>Note: <i>A consequence for one episode can often be the IE for another.</i></p>	<p>No consequence to the action/attempt is explicitly stated.</p> <p>Example</p> <p>a) <i>“She got away from the boy and walked out onto the grass.” The alien girl had a dress on.</i></p>	<p>One consequence</p> <p>Example</p> <p>a) <i>The spaceship landed. The aliens were happy to see her and cried when they flew away.</i></p>	<p>Two consequences</p> <p>Examples</p> <p>a) <i>They told their parents the spaceship was in the park. But their parents didn't believe them. When they took their parents to the park the spaceship was gone.</i></p> <p>b) <i>The boy wanted a frog. He went to the woods to find one. <u>He couldn't find a frog.</u></i></p>	<p>Three or more consequences</p>
<p>Formulaic Markers</p> <p><i>A formulaic marker is any standard utterance used to mark the beginning or ending of a narrative.</i></p> <p>e.g., <i>The end, once, once upon a time, they lived happily ever after etc.</i></p>	<p>No formulaic utterances</p>	<p>One formulaic utterance</p> <p>Example</p> <p>a) <i>Once upon a time</i></p>	<p>Two or more formulaic utterances</p> <p>Example</p> <p>a) <i>Once upon a time...The end.</i></p>	

Narrative Element	0 POINTS	1 POINT	2 POINTS	3 POINTS
<p>Temporal Markers</p> <p><i>e.g., when, next, then, immediately, instantly, after, again, already, always, before, lately, now, once, presently, rarely, today, weekly, while</i></p>	<p>No temporal markers</p>	<p>One temporal marker</p> <p>Examples</p> <p>a) <i>The girl walked over to the aliens. Then they all ate some lunch.</i></p> <p>b) <i>After the aliens landed, the girl screamed.</i></p>	<p>Two or more temporal markers</p> <p>Example</p> <p>a) <i>When the girl saw the aliens, she ran out to meet them. She already knew they would be nice.</i></p>	
<p>Causal adverbial clauses</p> <p><i>e.g., because, since, so that, therefore, as a result, consequently, thus, hence etc.</i></p> <p><i>Note: causal adverbs do not have to occur in concurrent sentences</i></p>	<p>No causal adverbial clauses</p>	<p>One causal adverbial clause</p> <p>Example</p> <p>a) <i>The aliens were not nice to the girl <u>because</u> they were scared.</i></p>	<p>Two or more causal adverbial clauses</p> <p>Example</p> <p>a) <i>The aliens were not nice to the girl <u>because</u> they were scared. <u>Since</u> they were mean, she ran away.</i></p>	
<p>Knowledge of dialogue</p> <p><i>Knowledge of dialogue is registered by a comment or statement made by a character or by characters engaging in conversation.</i></p>	<p>No dialogue</p>	<p>One character makes a comment or statement</p> <p>Examples</p> <p>a) <i>He said “Ow”</i></p> <p>b) <i>He said, “Don’t come over here!”</i></p>	<p>Two or more characters engage in conversation</p> <p>Example</p> <p>a) <i>He said “Oh look, there is an alien” and she said “Oh, lets go see them.”</i></p>	

Narrative Element	0 POINTS	1 POINT	2 POINTS	3 POINTS
<p>Narrator Evaluations</p> <p><i>Narrator evaluations are any explanation provided in the story to justify why an action or event took place.</i></p> <p><i>e.g. because, since, so, and in order to.</i></p>	<p>No narrator evaluations</p>	<p>One narrator evaluation</p> <p>Example</p> <p><i>a) She ran up to say hello to the alien <u>because she always wanted to meet one.</u></i></p>	<p>Two or more narrator evaluations</p> <p>Examples</p> <p><i>a) She knew that it was an alien spaceship because everyone knows about UFOs.</i></p> <p><i>b) He wanted to run from the aliens <u>since they were his worst nightmare.</u></i></p>	

Appendix D

INC Stories

STORY A

Once upon a time there was a young boy named Sam who loved to play soccer. Today was Sam's first soccer game. He was very excited because he wanted to play with his friends! He was excited to try on his new shoes. He opened the big, brown shoebox from the store and put the shoes on his feet. First, he tried to tie the laces himself, but they didn't look right. He realized he did not know how to tie them! So, he asked his little sister, "Sara, can you tie my shoes?" "I'm sorry, Sam," she said, "I don't know how to tie shoes." Sam felt sad because he was worried he wouldn't be able to wear his shoes to play soccer. Next, Sam went to his mom and said, "I don't know how to tie my shoes." Sam's mom said, "Don't worry, Sam! I'll teach you right now!" After she showed him, Sam practiced and practiced until he could tie them well! Then he marched off to play soccer with a big smile on his face. The end.

STORY B

There once was a girl named Annie. Annie had a big, fluffy dog whose name was Max. Max had white fur with brown spots. One day when Annie was going for a walk with Max, Max saw a cat and ran after it! "Oh no!" Annie shouted. Annie ran quickly down the street, but she couldn't keep up with Max and the cat and she lost sight of them. Annie worried that she might never see Max again. She decided to ask people in town if they had seen her dog. First, Annie went to ask Ernie, the man who works at the grocery store. "Have you seen my dog, Ernie?" Annie asked. "I'm sorry, I haven't seen him," Ernie said. Then, Annie went to see Mary who owns the flower shop. "Have you seen my dog, Mary?" Annie asked. "No, not today," Mary said. Annie wanted to keep looking for Max, but it was getting dark outside, so she started walking home. As Annie walked along, suddenly she heard loud barking. Down the street, she saw Max sitting on her front steps! "Max!" Annie shouted. She ran up and gave Max a big hug. The end.

Appendix E

Study Information Form

A STUDY OF THE ORAL LANGUAGE SKILLS OF KINDERGARTEN STUDENTS

Introduction

I would like to invite your child to take part in a study examining the development of children's language and storytelling skills of kindergarten students. I am interested in learning about children's abilities to tell stories. Please read this form and follow the directions at the bottom to let me know if you would or would not like your child to take part in the study.

Why am I doing this project?

This is a project required for my Master's degree at the University of Rhode Island. I hope that this project will provide useful information about early language skills for future researchers, as well as possible recommendations for teachers.

What will your child have to do if they participate?

Your child will meet with a trained assistant to complete several activities, such as retelling stories told to them by the research assistant, matching pictures with vocabulary words, and repeating phrases and answering simple questions.

How much time will it take?

I expect that each child will meet with an assistant for a total of 30 minutes.

Will this information remain confidential?

Children's stories will be audio-recorded so they can be scored, and your child's teacher will receive the results collected for educational purposes. Otherwise, the findings will remain confidential. The names of children will not be shared in any presentation or write-up of the results.

What are the advantages of taking part?

Your child's teacher may find the results helpful to help your child in the classroom. Children have fun doing these kinds of activities.

What are the risks?

Completing these activities should result in minimal risk. However, your child may feel restless doing activities for a prolonged period of time. With that being said, your child may return to class any time throughout the project.

Does your child have to participate?

No, taking part is voluntary. You or your child may withdraw from the study at any time. If you agree that your child can take part, please return the Background Information form on the back of this sheet. Please return the form by _____. If you do **NOT** want your child to participate, please sign and return this sheet to your child's teacher.

If you have any questions about the study, please feel free to contact Jeniffer Cruz (862-220-1878; jencruz@my.uri.edu) or Dr. Susan Brady (401-789-3961; sbrady@uri.edu).

.....
I do **NOT** want my child to participate in this study.

Child's Name _____ Date _____

Parent Signature _____

Appendix F

Background Information Form

BACKGROUND INFORMATION

Please fill out this sheet and return to your child's teacher as soon as possible. Thank you!

1. Child's Name _____ **Birth Date** _____

2. How many adults (18+) live in the home? _____

3. Language(s) spoken in the home _____

3. Parent/Guardian #1

a. Please circle one: Mother Father Other _____

b. Education Level:

- ___ Never attended school or only attended kindergarten
- ___ Grades 1 through 8 (Elementary)
- ___ Grades 9 through 11 (Some high school)
- ___ Grade 12 or GED (High school graduate)
- ___ College 1 year to 3 years (Some college or technical school)
- ___ College 4 years or more (College graduate)

c. Occupation: _____

4. Parent/Guardian #2

a. Please circle one: Mother Father Other _____

b. Education Level:

- ___ Never attended school or only attended kindergarten
- ___ Grades 1 through 8 (Elementary)
- ___ Grades 9 through 11 (Some high school)
- ___ Grade 12 or GED (High school graduate)
- ___ College 1 year to 3 years (Some college or technical school)
- ___ College 4 years or more (College graduate)

c. Occupation: _____

Bibliography

- Adlof, S. M., McLeod, A. N., & Leftwich, B. (2014). Structured narrative retell instruction for young children from low socioeconomic backgrounds: a preliminary study of feasibility. *Frontiers in Psychology, 5*.
- Arriaga, R. I., Fenson, L., Cronan, T., & Pethick, S. J. (1998). Scores on the MacArthur Communicative Development Inventory of children from low and middle-income families. *Applied Psycholinguistics, 19*(02), 209-223.
- Barnes, A. E., Kim, Y. S., & Phillips, B. M. (2014). The relations of proper character introduction to narrative quality and listening comprehension for young children from high poverty schools. *Reading and Writing, 27*(7), 1189-1205.
- Benson, S. E. (2009). Understanding literate language: Developmental and clinical issues. *Contemporary Issues in Communication Science and Disorders, 36*, 174-178.
- Bishop, D. V., & Snowling, M. J. (2004). Developmental dyslexia and specific language impairment: Same or different?. *Psychological bulletin, 130*(6), 858.
- Bowyer-Crane, C., Snowling, M. J., Duff, F. J., Fieldsend, E., Carroll, J. M., Miles, J., ... & Hulme, C. (2008). Improving early language and literacy skills: Differential effects of an oral language versus a phonology with reading intervention. *Journal of Child Psychology and Psychiatry, 49*(4), 422-432.
- Brimo, D., Apel, K., & Fountain, T. (2017). Examining the contributions of syntactic awareness and syntactic knowledge to reading comprehension. *Journal of Research in Reading, 40*(1), 57-74.

- Catts, H. W., Adlof, S. M., & Weismer, S. E. (2006). Language deficits in poor comprehenders: A case for the simple view of reading. *Journal of Speech, Language, and Hearing Research, 49*(2), 278-293.
- Chall, J. S. (1996). *Stages of reading development* (2nd ed.). Fort Worth, Tex.: Harcourt Brace.
- Chall, J.S., & Jacobs, V.A. (1983). Writing and reading in the elementary grades: Developmental trends among low-SES children. *Language Arts*, vol. 60, no. 5, pp. 617-626.
- Clarke, P. J., Snowling, M. J., Truelove, E., & Hulme, C. (2010). Ameliorating children's reading-comprehension difficulties a randomized controlled trial. *Psychological Science, 21*(8), 1106-1116.
- Connor, C. M., Phillips, B. M., Kaschak, M., Apel, K., Kim, Y. S., Al Otaiba, S., ... & Lonigan, C. J. (2014). Comprehension tools for teachers: Reading for understanding from prekindergarten through fourth grade. *Educational Psychology Review, 26*(3), 379-401.
- Curenton, S. M., Craig, M. J., & Flanigan, N. (2008). Use of decontextualized talk across story contexts: How oral storytelling and emergent reading can scaffold children's development. *Early Education and Development, 19*(1), 161-187.
- Curenton, S. M., & Justice, L. M. (2004). African American and Caucasian Preschoolers' Use of Decontextualized Language: Literate Language Features in Oral Narratives. *Language, Speech, and Hearing Services in Schools, 35*(3), 240-253.
- Davies, P., Shanks, B., & Davies, K. (2004). Improving narrative skills in young children with delayed language development. *Educational Review, 56*(3), 271-286.

- Epstein, S. A., & Phillips, J. (2009). Storytelling skills of children with specific language impairment. *Child Language Teaching and Therapy*, 25(3), 285-300.
- Fernald, A., Marchman, V. A., & Weisleder, A. (2013). SES differences in language processing skill and vocabulary are evident at 18 months. *Developmental Science*, 16(2), 234-248.
- Fish, M., & Pinkerman, B. (2003). Language skills in low-SES rural Appalachian children: Normative development and individual differences, infancy to preschool. *Journal of Applied Developmental Psychology*, 23(5), 539-565.
- Fluharty, N. B. (2001). *Fluharty-2: Fluharty Preschool Speech and Language Screen Test* (2nd ed.). Austin: Pro-Ed.
- Foorman, B. R., Herrera, S., Petscher, Y., Mitchell, A., & Truckenmiller, A. (2015). The structure of oral language and reading and their relation to comprehension in Kindergarten through Grade 2. *Reading and Writing*, 28(5), 655-681.
- Foorman, B. R., Koon, S., Petscher, Y., Mitchell, A., & Truckenmiller, A. (2015). Examining general and specific factors in the dimensionality of oral language and reading in 4th–10th grades. *Journal of Educational Psychology*, 107(3), 884.
- Gardner, W., Mulvey, E. P., & Shaw, E. C. (1995). Regression analyses of counts and rates: Poisson, overdispersed Poisson, and negative binomial models. *Psychological bulletin*, 118(3), 392.
- Gardner-Neblett, N., & Iruka, I. U. (2015). Oral narrative skills: Explaining the language-emergent literacy link by race/ethnicity and SES. *Developmental Psychology*, 51(7), 889.

- Graesser, A. C., Millis, K. K., & Zwaan, R. A. (1997). Discourse comprehension. *Annual Review of Psychology*, 48(1), 163-189.
- Griffin, T. M., Hemphill, L., Camp, L., & Wolf, D. P. (2004). Oral discourse in the preschool years and later literacy skills. *First language*, 24(2), 123-147.
- Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Paul H Brookes Publishing.
- Hipfner-Boucher, K., Milburn, T., Weitzman, E., Greenberg, J., Pelletier, J., & Girolametto, L. (2014). Narrative abilities in subgroups of English language learners and monolingual peers. *International Journal of Bilingualism*, 1367006914534330.
- Hoff, E. (2013). Interpreting the early language trajectories of children from low-SES and language minority homes: Implications for closing achievement gaps. *Developmental Psychology*, 49(1), 4.
- Hoff, E., & Tian, C. (2005). Socioeconomic status and cultural influences on language. *Journal of Communication Disorders*, 38(4), 271-278.
- Honig, A. S. (2007). Oral language development. *Early Child Development and Care*, 177(6-7), 581-613.
- Hulme, C., & Snowling, M. J. (2011). Children's reading comprehension difficulties nature, causes, and treatments. *Current Directions in Psychological Science*, 20(3), 139-142.
- Kendeou, P., van den Broek, P., White, M. J., & Lynch, J. S. (2009). Predicting Reading Comprehension in Early Elementary School: The Independent Contributions of Oral Language and Decoding Skills. *Journal of Educational Psychology*, 101(4),

765-778.

- Klecan-Aker, J. S., & Caraway, T. H. (1997). A study of the relationship of storytelling ability and reading comprehension in fourth and sixth grade African-American children. *European Journal of Disorders of Communication, 32*(1), 109-125.
- Liss-Bronstein, L. (2012). RTI for Language: Explicit and Systematic Intervention for Narrative Discourse Skills in Kindergarten (Unpublished Doctoral Dissertation). Central Connecticut State University, New Britain, Connecticut.
- Lynch, J. S., Van Den Broek, P., Kremer, K. E., Kendeou, P., White, M. J., & Lorch, E. P. (2008). The development of narrative comprehension and its relation to other early reading skills. *Reading Psychology, 29*(4), 327-365.
- Moreau, M. R., & Zagula, S. (2002). *Braidy, the story braid: Teachers' manual*. Springfield, MA: MindWing Concepts, Inc.
- Moreau, M. R. (2009). *MindWing's Data Collection & Progress Monitoring Process: Linking MindWing's Tools to the Teaching-Learning Cycle*. Springfield, MA: MindWing Concepts. Inc.
- Nation, K., Cocksey, J., Taylor, J. S., & Bishop, D. V. (2010). A longitudinal investigation of early reading and language skills in children with poor reading comprehension. *Journal of Child Psychology and Psychiatry, 51*(9), 1031-1039.
- Oakhill, J. V., & Cain, K. (2012). The precursors of reading ability in young readers: Evidence from a four-year longitudinal study. *Scientific Studies of Reading, 16*(2), 91-121.
- Paris, A. H., & Paris, S. G. (2003). Assessing narrative comprehension in young children. *Reading Research Quarterly, 38*(1), 36-76.

- Perfetti, C. A. (1985). Reading ability. New York: Oxford University Press.
- Petersen, D. B., Gillam, S. L., & Gillam, R. B. (2008). Emerging procedures in narrative assessment: The Index of Narrative Complexity. *Topics in Language Disorders, 28*(2), 115-130.
- Phillips, B. M. (2014). Promotion of syntactical development and oral comprehension: Development and initial evaluation of a small-group intervention. *Child Language Teaching and Therapy, 30*(1), 63-77.
- Reynolds, M. E., & Fish, M. (2010). Language skills in low-SES rural Appalachian children: Kindergarten to middle childhood. *Journal of Applied Developmental Psychology, 31*(3), 238-248.
- Roth, F. P., Speece, D. L., & Cooper, D. H. (2002). A longitudinal analysis of the connection between oral language and early reading. *The Journal of Educational Research, 95*(5), 259-272.
- Scull, J. (2013). Assessing Language for Literacy: A Microanalysis of Children's Vocabulary, Syntax and Narrative Grammar. *International Education Studies, 6*(1), 142-152.
- Silva, M., & Cain, K. (2015). The relations between lower and higher level comprehension skills and their role in prediction of early reading comprehension. *Journal of Educational Psychology, 107*(2), 321.
- Spira, E. G., Bracken, S. S., & Fischel, J. E. (2005). Predicting improvement after first-grade reading difficulties: the effects of oral language, emergent literacy, and behavior skills. *Developmental Psychology, 41*(1), 225.
- Stein, N., & Glenn, C. (1979). An analysis of story comprehension in elementary school

- children. In R.O.Freedle (Ed.), *New Directions in Discourse Processing* (pp. 53-120). Norwood, NJ: Ablex.
- Storch, S. A., & Whitehurst, G. J. (2002). Oral language and code-related precursors to reading: evidence from a longitudinal structural model. *Developmental Psychology, 38*(6), 934.
- Terry, N. P., Mills, M. T., Bingham, G. E., Mansour, S., & Marencin, N. (2013). Oral narrative performance of African American prekindergartners who speak nonmainstream American English. *Language, Speech, and Hearing Services in Schools, 44*(3), 291-305.
- Tompkins, V., Guo, Y., & Justice, L. M. (2013). Inference generation, story comprehension, and language skills in the preschool years. *Reading and Writing, 26*(3), 403-429.
- Vellutino, F. R., Tunmer, W. E., Jaccard, J. J., & Chen, R. (2007). Components of reading ability: Multivariate evidence for a convergent skills model of reading development. *Scientific studies of reading, 11*(1), 3-32.
- Wellman, R. L., Lewis, B. A., Freebairn, L. A., Avrich, A. A., Hansen, A. J., & Stein, C. M. (2011). Narrative ability of children with speech sound disorders and the prediction of later literacy skills. *Language, Speech, and Hearing Services in Schools, 42*(4), 561-579.
- Whitehurst, G. J., & Lonigan, C. J. (1998). Child development and emergent literacy. *Child Development, 69*(3), 848-872.