Supporting Preschoolers' Narrative Development

Through Play and Vocabulary Instruction

By

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CHAPTER I

INTRODUCTION

Narrative is a fundamental part of early development. Narratives are an important mechanism through which children understand and interpret the relationships between events, states, actions, and consequences (Bruner 1986). Young children encounter stories in many forms, including book reading, play, television and oral stories, as well as more practical forms, such as directions and explanations. Children enter preschool with a great deal of story knowledge and experience; nevertheless, children need considerable input, support, and practice to advance their narrative proficiency. Research by Reese et al. (2010), Oakhill & Cain (2011), and Kendeou et al. (2009) establishing links between students' early narrative proficiency and later reading achievement demonstrate the critical importance of supporting students' narrative development at an early age. Adult guided book reading and play are potentially effective contexts for supporting narrative learning, as they are typically centered on stories and have been shown to foster a variety of language skills (Lever & Sénéchal 2011).

The goal of this dissertation was to examine effective and meaningful instructional strategies which support narrative development in early childhood classrooms. Specifically, this research focused on how book reading, play, and adult-child conversations can advance preschooler's narrative skills. The emphasis of this study was on typically developing children, between ages three and five, who are acquiring a first language. The data for this study came from an intervention involving small groups of preschoolers in twenty-minute book reading and play sessions that incorporated explicit vocabulary instruction. The first objective of this study was to

examine the role of vocabulary learning, as a means to support narrative comprehension, hypothesizing that word knowledge is crucial to understanding narratives. The second objective was to understand how adult supported play versus independent play can assist children's narrative growth. It was hypothesized that adults participating in play provide important linguistic and structural supports that can foster narrative understanding. The third objective of this study was to understand the relationship between vocabulary learning and adult guidance, in the context of play, for narrative growth. It was hypothesized that vocabulary learning is an important mechanism for narrative learning within the guided play setting. Finally, the fourth objective of this study was to examine the different narrative experiences that children encounter in varying degrees of unsupported and supported play. For this exploratory analysis, we expected to find that more scaffolded and supported play sessions would provide children with additional opportunities to hear, enact, and comprehend narratives. This study sought to add to the growing body of literature by identifying the mechanisms driving narrative growth during book reading and play sessions for preschool children. Through the identification of appropriate strategies, targeted instruction can be developed to maximize children's narrative learning opportunities.

CHAPTER II

REVIEW OF THE LITERATURE

Narrative is recognized as the bridge between written and spoken language. Contextualized talk, such as everyday conversations and instructions, requires less formality and structure and therefore includes more repetitions and elaborations, simpler vocabulary, and longer utterances. By contrast, decontextualized language such as narrative talk, pretend play talk, and explanations, is conceptually more challenging, uses more sophisticated and varied vocabulary, and requires accurate formal grammatical structures (See Chafe & Tannen 1987 for review). Oral narratives provide the bridge between these two forms as telling a story requires the narrator to use concise sentence structure and advanced vocabulary while still allowing for duplications, elaborations and longer performances (Roth et al. 2002). Telling stories is an opportunity for children to develop and refine the higher-level language skills needed for later literacy and, in particular, reading proficiency.

For the purpose of this study, a narrative is considered to be two or more ideas or events that are temporally, causally or contrastingly connected (Peterson 1994, Minami, 2002) and typically refers to events or ideas that are removed from the immediate time and context (Peterson & McCabe 1999). Drawing from this, early narrative competence thus be can be defined as the 'ability to produce and comprehend stories, to understand story events and characters' actions as temporally sequenced and causally motivated' (Pellegrini 1985a, p.80). There are several approaches to assessing narrative competency, and these are reviewed later in this paper, but it is important to note that the studies reviewed here have employed varying assessment methods.

This chapter reviews the existing literature related to early narrative-learning opportunities in preschool classrooms. The first section examines the relationship between narrative skills and reading comprehension. This is followed by an overview of early narrative competency, including a theoretical framework for understanding and producing narratives. The next section discusses the social behaviors and practices that support early narrative learning. The final section looks at supporting narrative learning in the preschool classroom by examining two possible pathways: 1) improving the representation of story events through play and 2) fostering the learning of the vocabulary needed to understand the story. Each section presents implications from the reviewed literature for the current study.

The Relationship between Narrative Skills and Reading Ability

Narrative and reading are closely connected. Proficient readers and storytellers must create a mental representation of the story they read, hear, or tell in order to comprehend or produce a narrative (Van den Broek et al. 2011; Kintsch & Rawson 2005; Graesser et al. 1994; Lonigan & Whitehurst 1998). Although preschoolers are at the very beginning stages of learning to read, oral narratives are an early link to the decontextualized language forms, functions, and structures required to be a competent reader (Roth et al. 2002). In fact, the research suggests that early narrative skills are a strong predictor of reading achievement (Reese et al. 2010; Feagans & Appelbaum 1986; Oakhill & Cain 2011; Snyder & Downey 1991; Kendeou et al. 2009).

Narrative and early reading skills

Studies with both language-impaired and typically-developing children have found that narrative is predictive of early reading fluency but not necessarily early reading comprehension.

A reading fluency study from Feagans & Appelbaum (1986) supports this finding. They studied 55 language-delayed children from age 6/7 to 9/10 and looked at the predictive nature of narrative on their reading recognition and comprehension. In this study, children listened to a story, acted it out with props, and were then asked to retell the story. These were then scored on length, complexity, and number of narrative units, such as episodes, orientations, and evaluations. Reading recognition included reading words and letter knowledge tasks. They found that overall, children with stronger narrative skills performed better than those with weaker skills across the 3 years of the study. Their results showed that narrative at age six predicted reading fluency after year 1, but not at year 2 or 3. Interestingly, it was only in the third year that narrative was found to be a strong predictor of reading comprehension.

A more recent study by Reese et al. (2010) reported similar findings. This three-year study was conducted in New Zealand where formal schooling begins between five and six years of age. Children were assessed in their first year of formal schooling (age 5/6) and then again in their second (age 6/7) and third years (age 7/8) of school. At each assessment time point, children listened to a story and were then asked to tell the story. Children's stories were scored for narrative episodes, orientations, and evaluations; these scores were combined to make a single narrative score. The researchers found that, between age five and six, children's narratives predicted reading fluency. Once again, at age seven and eight, overall narrative scores significantly predicted reading outcomes, but results at this age revealed an interesting shift. Sophisticated features of narrative, namely orientations and evaluations independently predicted reading achievement, even when controlling for vocabulary and the previous year's scores. The authors conclude that knowledge of essential story episodes is crucial for early reading, but as readers become more skilled, they need

to develop more nuanced understanding of the story content, such as orientations and evaluations, in order to fully comprehend stories.

While these studies suggest there is a possible relationship between narrative and early reading fluency, the research on the narrative and reading comprehension relationship has mixed results, particularly when comprehension is measured at a young age. Menyuk et al. (1991) examined the predictability of several literacy skills for later reading and found no relationship between reading and narrative. They investigated kindergartener's literacy and language skills including story recall. Story recall in this study, involved children listening to a story from headphones and then retelling to a puppet. As with the previous two studies, narratives were scored for the number of propositions. Reading outcomes were then measured two years later when children were in grade one or two and they found that phonological skills were the strongest predictors of reading; narrative was not a significant predictor at all.

Snow et al. (1995) also analyzed the predictive nature of kindergartner's literacy and language skills. They included two narrative assessments – a picture description task and narrative production task where children told a story from three pictures, which was scored for number of propositions and syntactic complexity (number of words/number of clauses). One year later, at age six, they found that neither narrative measure correlated with reading comprehension. Lastly, O'Neill et al. (2004) replicated Faegans and Appelbaum's (1986) study with two key differences; they studied typically developing children and measured narrative skills at a younger age (three and four years). Furthermore, they limited the outcome to just two years, instead of three. For this narrative task children looked through a series of pictures (12) and were told to look at what's happening in the pictures. The story was started by the examiner and then children were asked to narrate the rest of the story using the pictures as a guide. The narratives were then scored on several

outcomes including, MLU, vocabulary diversity (ratio of different words/total number of words), number of story events, and mental state references. These were combined to create a single narrative score. Results showed that narrative was a strong predictor of math, but not reading accuracy or comprehension. Their research went further to examine whether specific aspects of narrative knowledge predicted reading, and found that vocabulary diversity in children's narratives was the item that best predicted later reading accuracy and comprehension.

These studies suggest that the relationship between narrative skills and comprehension may only be moderate. However, many in the field argue that reading competence in the early grades involves significant decoding efforts and that discourse skills like narrative may come into play at a later stage (O'Neill et al. 2004; Feagans & Appelbaum 1986; Snyder & Downey 1991; Kendeou et al. 2009; Storch & Whitehurst 2002).

Narrative and later reading comprehension

While studies of the relationship between early narrative and reading have had mixed results; studies that examine the relationship between narrative and comprehension outcomes in later elementary grades show a more consistent pattern. Oakhill & Cain (2011) studied the contributions of narrative discourse skills at age seven to reading comprehension at age nine. In this study, children were told a story and then asked to arrange sentences according to the narrative events and structure. They found that several strands of narrative skills such knowledge of narrative structure, comprehension monitoring, and story inferencing skills each independently predicted reading comprehension at age nine. The longitudinal results from the Feagans & Appelbaum (1986) study support this finding. They showed that, while kindergarten narrative

ability did not predict reading comprehension for six to eight-year-olds, it was a significant predictor for nine and ten-year olds.

Research also shows that the contribution of narrative ability increases as children get older. Snyder & Downey (1991) examined the contribution of various literacy competencies to reading comprehension at age 8 to 11 and age 11 to 14. Once again, children were asked to retell two stores read to them, which were scored for the number of narrative events included. The researchers found that while narrative skills account for significant variance in reading comprehension between 8 and 11 years of age, the contributing variance of narrative ability increases with age. Furthermore, they compared the contributions of decoding skills, such as phonemic, word and sentence level skills, with discourse level skills, namely, narrative retelling, and literal and inferential story questions, to reading comprehension. Their results indicate that around age eight, children are relying primarily on word and sentence level skills, but by the end of elementary school, they have largely mastered decoding and word identification skills, and are focusing more on high-level skills such as narrative structure and inferencing to comprehend.

Two more recent studies support Snyder and Downey findings. Kendeou et al. (2009) looked at two cohorts – age four and age six – and studied their outcomes two years later. They used two measures of narrative retelling, which was scored on the number of connected story events offered. Additionally, they included several other measures of language and literacy: receptive vocabulary to measure oral language skills, letter identification task, word identification and phonological awareness to measure decoding skills. Results from structural equation modelling revealed that preschool decoding and language skills (including narrative) each independently predicted reading comprehension in grade two. Like Snyder and Downey, their results showed that as children became more proficient at reading, the contribution of decoding

skills to reading comprehension decreased while the contribution of vocabulary and narrative increased. Lastly, a recent study by Uccelli et al. (2018) showed that children's decontextualized talk such as pretend and narrative talk, at 30 months predicted academic language and comprehension skills as far as 10 years later. The narrative assessment included several fundamental skillsets such as connecting ideas, tracking participants, organizing and sequencing texts, identifying definitions, and interpreting writers' viewpoints. Moreover, they showed that this relationship between early narrative language and later comprehension holds true even when accounting for maternal SES and early vocabulary.

Summary

Narrative ability is an important skill for reading proficiency. The research also suggests a possible relationship to early reading fluency, but no evidence linking narrative to early comprehension. On the other hand, studies of later reading proficiency demonstrate a strong relationship between early narrative competence and reading comprehension. These later reading skills are more closely connected to the skills required for understanding and producing narratives. Narrative competency, like advanced reading comprehension, requires the individual to coordinate and connect a variety of cognitive skills. While the results for early reading comprehension are mixed, the research is convincing that early narrative skills are an important precursor for language-related skills that are associated with later reading comprehension from around age eight.

Overview of Narrative Competency

Preschool is a time when children's narrative skills grow rapidly due to multiple factors such as cognitive development, educational influences, and extended opportunities to hear and

practice stories (Jarvey et al. 2008; Hudson & Shapiro 1991). Children's earliest narratives relate a few connected observations and ideas about the immediate world. Later they use knowledge about routines and regular events to tell stories about daily life (Nelson & Seidman 1984). Eventually children learn to tell classic stories that are based on increasingly sophisticated knowledge about narratives. This next section provides an overview of early narrative competency. First, a theoretical framework for understanding and producing narratives is presented. Next a summary of early narrative development is outlined, followed by an examination early narrative assessment.

Understanding and Producing Narratives

This study focuses on preschoolers' narrative comprehension skills, which can be defined as the ability to understand what a story is about and to apply this knowledge to various situations, for example to reproduce the story, answer questions, or make inferences and connections to other events and ideas (Van den Broek et al., 2005). Various cognitive process and representational models attempt to describe how we understand and produce narratives. Some models include the structural, linguistic, contextual, and reading processes (Hoover & Gough 1990; Tunmer & Chapman 2012; Kintsch & Rawson 2005), while others, such as the Landscape Model by van den Broek and colleagues, examine the cognitive mechanisms required for processing and retrieving narrative information (Van den Broek et al. 2011; Kendeou et al. 2009; Van den Broek et al. 2011; Lynch et al. 2008; Graesser et al. 1994; Trabasso & Rodkin 1994; Graesser et al. 1991). The Landscape Model is an appropriate framework for examining young children's narrative comprehension as it excludes the reading and writing mechanisms which are not a consideration in the preschool years; and instead focuses on processes and a framework that underlie narrative

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comprehension which are essential to understanding and producing oral narratives (Van den Broek & Kremer 2000).

To understand or produce a story, an individual must be able to create a coherent mental representation, or landscape model, of the narrative at hand (Van den Broek et al. 2011; Kintsch & Rawson 2005; Graesser et al. 1994; Lonigan & Whitehurst 1998). According to the Landscape Model of Comprehension, an individual constructs a network of concepts which are organized according to the listener's interpretation of the content and structure of the story (Morrow 1985; Van den Broek et al. 1999). But, merely identifying the central information units of a narrative will not automatically result in adequate comprehension or production; the listener must also understand the relationships between the story events and concepts in order to create a connected network of ideas. That is, they must be able to link each event to the network by causal, referential, associative, semantic, spatial, and/or logical relationships to produce a cognitive representation or landscape model of the current narrative (Van den Broek et al. 2005). Identifying core concepts and words in a story, and then linking these to other story events and background knowledge is one way that these narrative networks can be created and stored. It is important to note that different story events have varying numbers of connections to other parts of the story, as well as varying numbers of connections to an individual's background knowledge. These connections are a strong determiner of comprehension (Trabasso & Van den Broek 1985; Van den Broek et al. 1999; Van den Broek et al. 2011; Van den Broek et al. 2005). A story event with many connections to other story events and existing knowledge, are more prominent and memorable than those events with just a few connections. Once the parts of a story are assembled and interconnected to form a coherent landscape model, the individual can then activate the necessary story and background information to recall content, answer questions, apply knowledge, and make inferences about how

and why things happen. In summary, good comprehenders are able to create a coherent mental model by identifying core narrative events and establishing meaningful connections between these events, together with connections to existing background knowledge.

Development of Narrative Content in the Early Years

There are four broad strands of narrative knowledge that are required to comprehend and/or produce a typical narrative: content, structural, linguistic, and contextual knowledge (Hudson & Shapiro 1991). Each strand is necessary to produce a good story. Content knowledge describes the type of information units that make up a story. These are the pieces that tell listeners the 'who' (characters), 'what' (objects), 'when' (time), 'where' (places), 'why' (goals), 'what happened' (events and actions), 'interesting details' (elaborations), and 'resolution' (outcomes) of a story. Structural knowledge determines the organization and arrangement of content units into a coherent story. This ensures that the storyteller presents the content in a predictable framework, and thus helps the listener to understand and make inferences about the story. Third, a narrator must be able to produce appropriate linguistic features, such as connectives, pronominal references, and tense to create a fluent episode of events. Finally, contextual knowledge is an understanding of the narrative situation and task, such as, audience awareness, purpose or function of the story, and narrative genre. All four strands of story knowledge are important to produce a sophisticated narrative, however, content and structural knowledge of story are considered by some to be the most crucial for reading comprehension (Nezworski et al. 1982; Stein 1982; Graesser et al. 1991). Preschoolers produce interesting stories with a great deal of content information, however at this early stage, their narratives tend to be haphazard in structure. For this reason, early narrative support and assessment often focuses on the development of content knowledge.

Children's story skills advance in many ways between the ages of three and six. Initially children focus on connecting a few simple events, but with regular practice, they soon learn to include more content features and tell longer and more complex stories. Some content devices help the listener to make sense of the story events, for example information about characters, objects, time, and places. Other content features, such as goals and climaxes, give the story purpose and serve to guide the basic organization of the story, but do not necessarily impose an overarching structure. Finally, content units such as elaborations and evaluations, enrich a narrative, but these are not necessary to understand the story.

Frequency and Length. The frequency and length of children's stories increase significantly in the preschool years. This is a time when children have a range of opportunities and audience members—caregivers, siblings, teachers, and peers—to listen and respond to their stories. As a result, the total number of stories that children tell significantly increases between ages three and six (Peterson & McCabe 1983; Umiker-Sebeok 1979). As preschoolers narrate more stories, they become more proficient, and ultimately start to tell longer stories. (McCabe & Rollins 1994; Trabasso & Nickels 1992). Initially, children incorporate more event sequences to create longer stories, but later, they learn to augment their stories with a wider range of content devices. However, some of these devices are more complex and more challenging to master; therefore, children learn some more quickly than others.

Rising actions. Young children's narratives are primarily comprised of rising actions; these are the story events that typically lead to a climax or goal (Kontos et al. 1986). Very young children begin by narrating two or three simple story events, but quickly start to tell longer stories by connecting an increasing number of events. Eventually children expand their stories to include other narrative devices. This is an important development, as a series of narrative events does not

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produce a complete narrative; story events need to be reasonably organized around an end goal (Kontos et al. 1986; Peterson & McCabe 1983).

Climaxes. Classic stories are organized around a goal or climax that prompts a series of story events to occur. Thus, a typical narrative, particularly those found in traditional children's books, is comprised of a series of rising actions that lead to a climax where the goal is, or is not, achieved. The goal or climax focuses the story on an overarching purpose (Hudson & Shapiro 1991). Around three and four years of age, children relate stories as a set of isolated events that are not necessarily directed towards a climax. By age five, children start to tell integrated stories with an end-goal in mind, but it is not until age eight or nine that children regularly produce structured narratives that lead to a story climax (Berman 1988; Stein & Albro 1997; Trabasso & Nickels 1992). Overall, preschoolers are able to connect story actions and events to produce a simple narrative, but are less proficient at organizing these episodes around a clearly identified end-goal. It is not until early elementary that this becomes commonplace.

Resolutions. These tell us what happened as a consequence of the goal-directed events. Resolutions tie the events together, report whether the end-goal was or was not achieved, and end the story. For preschoolers, this is an advanced content feature as it requires narrators to master events, climaxes, and resolutions, and coordinate them in a single story. Resolutions are relatively uncommon in stories told by children under five as they are not yet able to organize events around an end-goal (Peterson & McCabe 1983). Five-year-olds are considerably better at providing narrative outcomes, but they are inclined to end their stories abruptly without an adequate conclusion (Peterson & McCabe 1983). By six years of age, children start to understand that good narratives have a resolution of some sort, and by this age, story outcomes become more common.

Orientations. Orientations are a fundamental element of any story as these features provide the listener with the necessary contextual information about characters, objects, and actions in time and place (Haden et al. 1997). Thus, at the start of preschool, children include very few story orientations. As they improve their narrative skills, they quickly begin to incorporate character and setting features, only much later do they master 'when' and 'what' types (Umiker-Sebeok 1979; Berman 2001)

Elaborations. Elaborations communicate the narrator's perspective and interpretations (Ukrainetz et al. 2005). Without this type of information, the listener will understand the essence of the story, but not have the complete picture (Hudson & Shapiro 1991; Peterson & McCabe 1983). In other words, elaborations are the details beyond simply naming the people, places, or events; rather they provide specific descriptions and explanations that direct the listener's attention to what is important and interesting (Haden et al. 1997; Harkins et al. 1994; Labov & Waletzky 1997; Kernan 1977). Elaborations provide details and a frame of reference to better understand the story and are considered to be the most sophisticated element of narrative content. Close investigations of preschoolers' stories reveal that they do include some elaborative forms, however they are simple and infrequent (Peterson & McCabe 1983; Ukrainetz et al. 2005). Peterson & McCabe (1983) found similar results. Mostly, preschoolers provide basic details about characters, places, and events. Older elementary children provide more varied and more complex information, such as details about character motivations and circumstances.

Assessing Preschoolers' Narrative Performance

Considering the importance of narrative skills, it is necessary to understand preschoolers' abilities in terms of narrative comprehension and production. This issue has important implications

for determining how to adequately assess and support children's narrative progress (Paris & Paris 2003; Morrow 1985; Van den Broek et al. 2005; Oakhill & Cain 2011; Cain et al. 2004). Narrative assessments can offer useful insights into student's understanding of story. Narrative assessment is multifaceted (Paris & Paris 2003) and as such, these tasks require an individual be able to integrate information, follow the main story events, understand the temporal and causal connections between these events, and make inferences about the relationships among the presented ideas (Reed & Vaughn 2012; Paris & Paris 2003). Broadly speaking, there are two types of narrative assessments, norm-referenced and criterion-referenced (Petersen et al. 2008). Norm referenced tests determine whether or not a child's narrative skills are consistent with their peers of similar age; and if not, how far are they from the average skills of that age group. The Renfrew Bus Story (Cowley & Glasgow 1994) and the Test of Narrative Language (TNL) (Gillam & Pearson 2017) are two examples of norm-referenced instruments that feature in the studies reviewed here. The TNL measures children's narrative comprehension and production and has been shown to be useful for identifying language impairments in children between age five and twelve. The Renfrew Bus Story assesses children between the age of three and eleven, and is useful for predicting later language outcomes (Pankratz et al. 2007). Norm referenced tests are typically used as diagnostic measures to identify language problems.

Criterion-referenced assessments are used to determine a child's knowledge and skill. These are commonly used for student assessments as they demonstrate to what extent a learner is able to perform a specific narrative skill. Within this category, several different methods are used to assess young children's narrative proficiency, including answering questions about narratives, generating stories using prompts and pictures, composing personal narratives, and retelling stories. Each technique provides different but valuable insights into children's narrative proficiency.

Comprehension questions typically require children to listen to a passage and answer literal and inferential questions. Some advantages of this procedure are that it can target inferencing skills and assess a child's understanding of specific content. However, one limitation is that children have less opportunity to demonstrate a holistic interpretation of the content, offer personal insights and interpretations into the content, or express their knowledge and understanding of non-targeted content (Skarakis-Doyle & Dempsey 2008). Another assessment approach is to use a story generation task (with or without picture prompts). This task allows children to demonstrate a wider range of content knowledge; furthermore, this approach offers a better indication of language skills, such as vocabulary. Similarly, personal narrative tasks allow children to draw on familiar topics and references to demonstrate their narrative competence (McCabe & Bliss 2003); however, this approach can yield significant variation in performance and poses several scoring challenges (Vandewalle et al. 2012).

One method that is often used in the reading field is narrative retelling, as it is considered by many to be a good measure of student comprehension (Paris & Paris 2003; Culatta et al. 1983; Morrow 1985; Trabasso et al. 1981; McCabe & Rollins 1994; Van den Broek et al. 2005). In this task, children are required to either read or listen to a passage or story and then tell the story to an examiner. Retelling requires the listener to organize the information in a meaningful way and then use appropriate vocabulary and grammar to reproduce the story (Reed & Vaughn 2012; Skarakis-Doyle & Dempsey 2008). One advantage of retelling procedures is that they allow students to demonstrate their understanding of the whole story, emphasize the story content that they determine to be important, and provide personal interpretations; therefore, this approach may be less constraining than other procedures such as comprehension questions (Skarakis-Doyle & Dempsey 2008; Morrow 1985). Furthermore, retelling tasks are considered by many to be an

appropriate task for young children, as they offer several important supports (Van den Broek et al. 2005). Preschoolers are not yet proficient at providing adequate structure for their stories, and therefore need help organizing and producing the information they possess. Retell procedures make provision for this by supplying children with story content and structure (Skarakis-Doyle & Dempsey 2008); presenting the necessary grammar and vocabulary during the story (Skarakis-Doyle & Dempsey 2008; Vandewalle et al. 2012); and providing picture prompts that guide narrative structure. These supports help to reduce the cognitive demands during the retelling procedure (Van den Broek et al. 2005; Cain et al. 2004). One final advantage of retelling procedures is that they are relatively quick to administer and retold narratives can be assessed uniformly across passages, thus providing immediate, reliable, and quantifiable data (Reed & Vaughn 2012; Paris & Paris 2003).

Some important limitations must be considered when administering story-retelling assessments (Reed & Vaughn 2012; Shapiro & Hudson 1991). One limitation is the memory demand. In story-retelling tasks, an individual must remember the important narrative elements and how they fit together in order to first comprehend and then produce a retelling. In fact, several studies have shown that working memory is closely related to the central components of narrative competence, such as integration, monitoring, and knowledge of story structure (Oakhill & Cain 2011; Cain et al. 2004; Seigneuric & Ehrlich 2005). Appropriate supports must be provided to adequately manage these cognitive demands, particularly for young children. Another challenge is variation in assessment administration, particularly in prompting and scoring protocols. First, assessment prompts can have a considerable impact on narrative results therefore it is crucial to ensure that consistent and equitable prompts are used. A second limitation that applies to many narrative assessments is scoring reliability (Reed & Vaughn 2012). Rubrics that assess narrative

performance can vary greatly, and reports of interrater reliability from a variety of narrative studies range from 59 to 100% agreement (Reed & Vaughn 2012). Rubrics and scoring that are poorly defined or too stringent are susceptible to greater error. In their analysis of retell measures, Reed & Vaughn (2012) suggest that researchers and educators must ensure consistency during testing by providing proper training, manageable rubrics, and regular scoring checks.

There are several retelling tasks that are have been used to assess student's narrative skills. Tasks that assess comprehension typically examine story content – what information is provided and whether it is coherently presented (e.g., Best et al., 2008; Curran, Kintsch, & Hedberg, 1996; Hansen, 1978; McGee, 1982; Miller & Keenan, 2009; Pflaum, 1980; Richgels et al., 1987; van den Broek, Tzeng, Risden, Trabasso, & Basche, 2001; Zinar, 1990). Retelling information scores have been widely used in language impairment research as it has good predictive value for children's language outcomes (Pankratz et al. 2007; Stothard et al. 1998; Paul & Smith 1993; Hofer et al. 2009), as well as reading comprehension (Nezworski et al. 1982; Van den Broek et al. 2011; Cain et al. 2004; Oakhill & Cain 2011). Overall, retelling is a valuable and effective measure of narrative comprehension. This study employed a retell assessment tool that was adapted from various rubrics and guidelines that are outlined here.

Supporting Narrative Learning

Narrative skills are believed to be learned through socialization practices where more proficient storytellers model and scaffold narrative understanding (Hollich et al. 2000; Peterson 1994). Book reading, narrative conversations, and narrative play are contexts where adults and children tell stories, read stories, and co-construct stories, which enables children to hear, learn, and practice understanding and producing narratives. The following section examines the various

contexts and practices that support narrative learning. First, shared book reading, adult-child narrative conversations, and enactment are examined as valuable practices for narrative learning. This is followed by a discussion of the role that adult and child vocabulary knowledge play in these narrative interactions.

Shared Book Reading

Shared book reading is a widely used context to support language learning. A meta-analysis of narrative interventions in early years classrooms showed that book reading sessions are the most common starting point for narrative lessons. Of the 15 studies reviewed, all of them included a read-aloud session as the main strategy (Pesco & Gagné 2017). This is unsurprising as many children's books are narratives based and therefore serve as a model for good stories. Furthermore, books are well suited to supporting narrative development for several reasons. First, children's books are interesting and stimulating and keep children engaged for an extended period of time (Crain-Thoreson & Dale 1992). Second, book reading is an activity that many children like to engage in repeatedly (Ortiz et al. 2001; Sénéchal 1997). Third, book illustrations provide visual cues and representations of the text to guide understanding (Glenberg & Langston 1992; Paris & Paris 2003); and fourth children's books include complex and specific vocabulary that support narrative (Dickinson et al. 2014; Snow 1991; Lynch et al. 2008).

However, book reading alone is not enough. Sénéchal and colleagues found that while reading frequency is positively related to vocabulary, sentence comprehension and morphological knowledge, there is no correlation between reading frequency and narrative skills (Sénéchal et al. 2008). Nonetheless, there are several studies that show that high quality book reading experiences do support students' narrative learning (Lever & Sénéchal 2011; Kang et al. 2009). In these studies

high-quality book-reading interactions involve regular adult-child conversations about stories where adults ask open questions, and repeat, recast, and expand children's utterances (Lever & Sénéchal 2011; Kang et al. 2009; Kang et al. 2009; Kim et al. 2011; Zevenbergen et al. 2003). By contrast, regular book reading experiences typically involve hearing a story, and identifying and labelling pictures. The findings from these studies showed that children who have high-quality book-reading experiences develop specific knowledge about narrative features such as story introductions, orientations, problems or goal, resolutions, and story closings. Thus, adult interactions and scaffolding during book reading help children learn about advanced narrative devices that are essential to good stories.

While adult support is an important ingredient in high-quality book reading experiences, so is child participation. Kim et al. (2011) examined the relationship between children's spontaneous utterances during shared book reading and their narrative retelling skills. Conversational utterances during book reading were coded for amount of overall talk and amount of book related talk. Results showed that children who talked more frequently during shared book-reading sessions also produced higher quality stories. Specifically, children who contributed to story evaluations, repeated adult utterances, and used more complex vocabulary told stories with more sophisticated language and included more content features such as story introductions, orientations, resolutions and endings. It is important to note that it is possible that children who participated more frequently are more linguistically advanced, and therefore are able to tell better stories. Another important finding from this study is that children participated and responded more often when adults encouraged talk, asked questions and prompted for responses. In sum, child participation is a valuable ingredient for narrative learning during book reading experiences.

Adult-child Conversation: Joint Construction of Narrative

Adults-child conversations around narratives play a central role in fostering narrative growth. First, adults model advanced and descriptive stories for children to learn from (Fivush & Fromhoff, 1988, Harkins, Koch, & Michel, 1994, Newcombe & Reese, 2004, Tessler & Nelson, 1994). Second, adults scaffold children's narrative attempts when they ask questions and provide feedback. Together, these strategies draw children's attention to elaborative and descriptive story content, and help to advance their narrative knowledge. However, the content and quality of adult-child conversations can vary considerably, and different adult talk styles and strategies will influence children's engagement, contributions, and development (Meacham et al. 2014; Uccelli et al. 2018).

Adult narratives serve as an important model for young children. There are significant correlations between the stories children hear and those they tell (Fivush & Fromhoff 1988). Specifically, mothers who tell stories with rich details and descriptions about people, places, and activities have children who provide similarly rich information in their stories (Tessler & Nelson 1994; Harris & Schroeder 2012). This relationship holds true whether children are asked to tell the same or different stories to those they hear from adults around them Harkins et al. (1994). Furthermore, this relationship is sustained over time. Demir et al. (2015) showed that early maternal narrative talk (at 30 months) predicts later narrative skills (age 5). These findings suggest that children are using maternal stories as a guide rather than simply mimicking the stories they hear.

A second important feature of adult-child narrative talk is scaffolding. Scaffolding strategies include asking open questions and follow-up questions, making connections, providing feedback, and offering confirmations. These conversations encourage children to contribute to

narrative conversations and thus support early narrative growth. A longitudinal study by Peterson et al. (1999) showed that parents who ask open questions and follow up with positive confirmations provide children with opportunities to participate in the construction of narratives help children produce more detailed narratives. Similar findings come from, Hakkarainen et al. (2013) who found that play sessions where adults and children collaborated to create play stories, helped children to develop longer and more creative narratives. Another recent study, looked at the proportion of decontextualized talk (explanation, pretend and narrative talk) between children and carers (Uccelli et al. 2018). After controlling for SES and children's vocabulary skills, results showed that adult-child decontextualized conversations were significantly predictive of later language skills such as connecting ideas, tracking referential chains, comprehending complex sentences, and organizing text – all key skills for successful narrative competence. Although children's decontextualized talk was a significant predictor of their later language proficiency, it was found that child and adult talk was so highly and positively correlated (r = 0.81, p<0.001) that collinearity issues confounded the finding and instead a composite variable of child and adult talk was used. This adult-child composite variable was a significant predictor of children's later language skills. These findings highlight the need to consider both adult and child contributions within the narrative context.

Other studies have found a similar relationship showing that children who are encouraged to participate in the narrative process are more likely to produce sophisticated narratives that contain elaborations and descriptions beyond simply naming characters and places or recounting events (Boland et al. 2003; Reese & Newcombe 2007). In sum, the research is convincing that adult-child conversations around narrative provide an important model for children to learn from, particularly interactions that stimulate engagement through open questions, extensions, and

confirmations. Less is understood about the role of language, particularly the role of vocabulary for narrative learning.

Enactment: Moving, imagining, and observing stories

It has long been hypothesized that dramatization helps students to understand and tell better stories. Dramatic play or enactment is "the creation of an imaginary situation, in which children and adults change the meaning of objects and actions, giving them a new sense" (Fleer 2015, p.2). Hakkarainen et al. (2013) proposed that dramatization serves as a model for thinking about stories as it requires participants to identify, respond to, and discuss story elements and ideas. Story-related enactment is a good context in which to support early narrative development as it is an enjoyable and flexible setting for children to explore narratives. Moreover, researchers have observed many structural parallels between preschoolers' pretend play and narratives, including setting, a central goal or problem that develops over a number of episodes, and a resolution (Eckler & Weininger 1989). Dramatization offers children an opportunity to create bodily representations of the stories they hear that help them to make meaning of narratives (Glenberg et al. 2004; Saltz et al. 1977; Wagner & Barnett 1998). These representations bolster narrative comprehension by placing the stories in context and making the narrative episodes, and the connections between them, more salient and meaningful.

Studies by Glenberg and colleagues have shown that enactment helps children to learn about story events. These researchers conducted three studies with six- and seven-year-olds to understand the role of dramatization for narrative understanding. They found that children who enacted stories provided significantly more event features in their stories than children who simply read or heard stories (Glenberg et al. 2004). Biazak et al. (2010) went a step further and sought to

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understand if play-based stories supported the development of specific narrative content—settings, character and object introductions. They replicated the previous study. They found that children in the dramatization group told stories with more actions and events than those in the imagination only group, but there was no difference in recall of story characters and setting features, suggesting that dramatization facilitates children's understanding of activity-related story features rather than general story knowledge.

It could be argued that the actions are helping student to generate mental representations of narrative events, and therefore, it is possible that imagining the actions is as beneficial as performing the actions. When Glenberg et al. (2004) extended their study to investigate this very question, they found that imagining the story events helped students to understand and recall the story events better than simply reading. Unfortunately, no comparison was done between imagining and performing, therefore it is not clear that imagining the narrative is comparable to enacting the story. However, these two conditions have important implications for younger learners as older children have more experience with both play and narrative and therefore are more adept at generating mental representations of narrative than younger children. Additionally, dramatization appears to support comprehension of narrative events which is a feature of narrative that is predominately learned during the early stages of narrative development, and thus a skill that older students will have likely mastered. Marley et al. (2011) compared narrative outcomes for children of different ages and found that imagining story episodes was sufficient to bolster narrative comprehension in older children (third grade), but younger children (first grade) required the physical activity to facilitate learning.

In reality dramatization and play are social activities that do not typically allow all participants to enact all roles, sometimes they are the actor and other times they are the observer.

Yet, group dramatization studies show that alternating between enacting and watching peers enact is as beneficial for narrative growth as performing all episodes oneself (Glenberg et al. 2006). Furthermore, there is no significant difference between children's ability to remember story events that they enact themselves versus those events that they observe a peer enacting. This has important implications for the benefits of small group play activities; moreover, these results suggest that less active play participants may gain similar benefits from small group play as active players.

The Relationship Between Vocabulary Instruction and Narrative Development

The evidence from research reviewed earlier, shows that book reading, story enactment, and adult-child conversations play a central role in fostering narrative development. However, few studies have examined another potential link between these adult-child interactions and narrative learning: the possibility that learning vocabulary plays a role in narrative development. The landscape model, proposed by van den Broek, Kendeou and colleagues, emphasizes the importance of establishing salient connections between story events, as well as between story events and background knowledge. Vocabulary is likely to play a central role in this process. A deep understanding of a story-specific word, one that has many connections to similar concepts and contexts, can help one to make appropriate narrative connections between story events and in this way facilitate the construction of a complete and coherent mental model. It is probable that word knowledge supports narrative comprehension, and at the same time, narrative comprehension helps children to learn new words and deepen their understanding of existing vocabulary. However, only a few studies have examined the potential link between vocabulary and children's narrative competence.

There is considerable evidence from reading research that vocabulary knowledge, particularly depth of knowledge, is significantly and positively related to reading comprehension (Cain et al. 2004; Vellutino et al. 2007). Depth of vocabulary knowledge (Roth et al. 2002) refers to the network of interconnected information that an individual knows about any given word. High-quality word knowledge can include many dimensions of word knowledge including knowledge about: semantic information, contextual information, the multiple meanings of a word, and related words (Perfetti 2007). This deep vocabulary knowledge enables a learner to quickly retrieve the appropriate word meaning together with connections to related information, contexts and concepts. In this way high-quality word representations allow for efficient word processing and provide multiple conceptual supports to aid comprehension (Perfetti 2007).

While, high-quality vocabulary knowledge is developed through repeated exposure and relevant experience with words (Bolger et al. 2008; Perfetti et al. 2005); there are several factors that can enhance children's word learning experiences (See Dickinson et al. 2012 for a concise review) including frequency, interest, explicit meanings, positive experiences, and meaningful contexts. In view of these factors, narrative play can provide an ideal setting for word learning. Dramatic play revolves around a central theme that requires word repetition and use of a variety of synonyms. Moreover, contextually and conceptually linked words are used together. The use of toys, props, and enactments offer children multiple representations of word meanings. Another feature is that play is intrinsically interesting, engaging, and enjoyable for young children. Finally, adult supported play offers opportunities for children to hear and use words with guidance and feedback from more experienced individuals. Narrative play can offer children an interesting and engaging environment for learning words as they are used in ways that are directly relevant to stories.

Some preliminary research suggests that the link between vocabulary and narrative is important, and indicates that it is children's *own* vocabulary skills, rather than vocabulary input from adults, that are significantly related to narrative proficiency. Demir et al. (2015), sought to determine if the amount and complexity of maternal talk in terms of the mean length of utterance (MLU) predicted children's narrative skills. Parent-child dyads were videotaped during typical conversation activities, such as mealtimes, book reading, and play. Afterwards, parent conversational talk was coded for MLU. Children were asked to watch two unfamiliar cartoons and then tell the story. Analysis revealed that although the amount of adult narrative talk significantly predicted children's narrative skills, the MLU of parent utterances did not mediate this relationship between adult talk and children's narrative scores. The authors proposed that other features of adult talk, particularly complex vocabulary, are likely to facilitate the relationship between adult talk and children's narratives.

The Harvard Home-School Study of Language and Literacy (HHSSLL) study (Dickinson & Tabors, 2001) investigated this relationship between adult vocabulary input and preschoolers' narrative achievement. Seventy-four children were followed from age 3 to age 5. Mother-child pairs were audio-taped in their homes while reading books, telling stories about a recent event, or playing with toys, while teachers were recorded during regular classroom activities. After controlling for race, income, mother's education, child gender, and child's mean length of utterance, the authors found that adult's rare word density correlated with children's general vocabulary growth. However, neither teachers' nor mothers' rare word density was correlated with children's narrative achievement. The HHSSLL study examined general language input from adults rather than story-specific language. It is possible that vocabulary input needs to be targeted and narrative-specific in order to support story understanding.

There is some evidence that children's own word knowledge, particularly their ability to understand and use story-specific vocabulary, is a significant predictor of narrative proficiency. Uccelli & Páez (2007) examined the narratives of 24 bilingual Spanish/English kindergartners and looked at the relationship between word knowledge in kindergarten and narrative proficiency in first grade. Expressive and receptive vocabulary were measured using the Woodcock Johnson assessment protocol. The narrative assessment task involved telling a story from a series of pictures. Children's stories were then scored in terms of quality (structure and complexity), total number of words (TNW), and total number of different words produced (TDW). It is important to note that TNW and TDW measure the words used in retelling the stories and are therefore measures that reflect children's existing story-specific vocabulary knowledge. The regression results showed that kindergarten vocabulary significantly predicted first grade narrative quality, explaining 30% of the variation. Furthermore, the TDW in kindergarteners' narratives independently predicted grade 1 narrative scores. Together, vocabulary and TDW in kindergarten accounted for 44% of the variance in narrative proficiency in grade 1. Thus, children with greater lexical diversity, in terms of story-specific word knowledge, told better structured and more complex stories; once again highlighting the importance of word knowledge for narrative competence. It should be noted that children's lexical diversity may be an indication of more language-rich experiences that could ultimately foster more advanced verbal competences, such as narrative skills. Additionally, the assessment was exclusively, a narrative production task, where children could rely on established story and vocabulary knowledge. Children were not required to comprehend unfamiliar stories or unknown words in order to make sense of the narrative at hand. Nonetheless, these findings do indicate that story related vocabulary is an important component of narrative proficiency.

Summary

Adults modeling storytelling (Tessler & Nelson 1994; Harris & Schroeder 2012; Demir et al. 2015); and child participation (Peterson et al. 1999; Hakkarainen et al. 2013) are closely intertwined, and evidently key ingredients for narrative learning (Uccelli et al. 2018). Additionally, there is some evidence that children's vocabulary knowledge plays an important role in narrative competence.

In order to employ effective teaching and learning practices, it is necessary for educators to understand how much direction and story structure adults should provide; as well as how this impacts child participation and learning. Narrative play is an engaging activity for young children (Hakkarainen et al. 2013), to help comprehend narrative events and concepts (Glenberg et al. 2004; Biazak et al. 2010). For young children, enacting stories is more useful than simply hearing, verbalizing, or imagining stories (Marley et al. 2011), however teachers need clearer guidance on play roles and participation in order to provide optimal narrative learning opportunities; such as whether children should act out a complete, structured narrative or if enacting selected story events without a prescribed narrative structure is sufficient for effective narrative comprehension. This study addresses these questions by examining the differences in adult support and child participation during narrative play in order to provide specific guidance for educators on how to best implement adult and child play scenarios for optimal narrative learning.

Fostering Narrative Learning in Preschool Classrooms

There is already a considerable body of research that guides preschool educators on a variety of effective literacy and language instructional strategies. Several intervention studies have shown that regular, focused, and explicit instruction can significantly improve children's literacy

and language outcomes (Whitehurst & Valdez-Menchaca 1988; Justice et al. 2003; Justice et al. 2008; Whitehurst & Lonigan 1998; Vasilyeva et al. 2006; Kleeck et al. 1998; Wasik et al. 2006; van Kleeck et al. 2006). Furthermore, interventions to improve preschooler's narrative competency have also proven effective. A recent met-analysis conducted by Pesco & Gagné (2017) aimed to determine which instructional strategies showed the most promise for narrative learning in the early childhood classroom. Fifteen intervention studies that targeted narrative knowledge and skills were identified. Nine studies were from peer-reviewed journals and six were unpublished and sourced from a doctoral thesis database. All studies included participants between 2 and 6 years of age and included at least some first language learners (but included some second language learners as well). This meta-analysis examined the effect of different instructional strategies for supporting narrative growth. Five interventions involved retelling practice for at least one experimental group; either individual, supported, or group retelling. Four studies included child enactment activities in at least one experimental group, and two involved adults enacting stories (these are discussed in more detail in the next section). Four studies included explicit instruction around narrative features and/or structure. All 15 interventions included at least one book reading session with opportunities for adults to discuss stories and scaffold children's narrative learning. These verbal scaffolding strategies were defined as opportunities to engage "children in dialogue before, after, or during read-aloud or oral narration in order to facilitate their understanding or to elicit story knowledge or vocabulary associated with a particular story element" (Pesco & Gagné 2017, p.793). These were described in various ways across the studies and included a wide range of topics for example introducing stories, drawing children's attention to important aspects of stories, discussing story-related experiences, reviewing central themes, identifying characters' goals or emotions, or encouraging children to fill in missing elements of stories. The foci of these

discussions were categorized by the outcomes measured such as, story production, story structure components, sequencing, evaluation, and literal or inferential questions. Outcomes were broadly categorized as either evaluative or expressive assessments. The evaluative category comprised sequencing, structure, evaluative, or inferencing tasks, usually from picture-arrangement or question-and-answer style assessments. While expressive measures assessed the quality of narrative information from narrative production tasks. There are several findings that are pertinent to this study.

First, results showed that when verbal strategies were combined with nonverbal ones, such as enacting stories or telling stories with props, children's storytelling improved significantly from pre- to post-test (expressive), but this did not hold true for the narrative evaluation-type measures. This suggests that narrative interventions are effective for fostering story-telling skills, but not necessarily helpful for developing inferential and evaluation skills. The second analysis compared verbal strategies to a combination of verbal + enactment (bodily or with props) strategies and revealed that the combined approach had a significantly greater effect for expressive outcomes, but again, the result for the evaluation assessments was nonsignificant. It is possible that story enactment fosters narrative expression by allowing children to embody the characters and participate in the narrative events. Furthermore, enactment may allow children to connect storytelling to imaginative play and use these play skills to support their narrative production. Third, the researchers investigated whether combining verbal scaffolding with explicit instruction was more effective than using verbal scaffolding strategies alone. These explicit strategies involved direct instruction regarding story elements, structure, and sequencing, which included heavily scaffolded discussions, practices, and retell activities. The result was nonsignificant, but

the authors attribute this result to a lack of power (only four studies used embedded + explicit strategies) and propose that further investigation is necessary.

On the whole, this meta-analysis confirmed that providing opportunities for preschoolers to act out stories is beneficial for early narrative learning; but the inconclusive results regarding adult guiding strategies leaves an unanswered question in the research: how much adult support is optimal for fostering narrative growth in the preschool learning and play environment? What is more, none of the studies examined the role of vocabulary for narrative learning, despite the considerable evidence from reading research that word knowledge is crucial for comprehension. This study aimed to address these questions; first, by comparing directed play, guided play, and independent play methods, and second, considering the role of vocabulary instruction within these play conditions.

Using Play for Narrative Learning in the Preschool Classroom

There is considerable evidence that interventions that use play can help students tell more comprehensive and better organized stories than typical adult guided classroom activities. This next section examines the four studies, mentioned above, that used play-based strategies to foster narrative learning in the preschool classroom setting. While all four studies show that adult guidance during play is beneficial for preschooler's narrative development, there are some limitations. First, the designs of the different play conditions include varying methods of adult support, making it difficult to tease apart the role of play versus the role of adult support. Second, the methods used to provide adult support during play differed considerably across the studies. In some studies, the adults narrated the story and prompted the children to enact narrative events, which is sometimes termed 'directed play.' In contrast, in other interventions, the adults

participated in play and provided guidance through modelling, which is termed 'guided play.' Furthermore, the method descriptions were not always sufficiently detailed concerning the strategies employed in each study; thus, the results do not provide sufficient insight into which support strategies are most beneficial for narrative learning.

A seminal play study performed by Dansky (1980a) found that children who participate in adult guided-play tell significantly better stories than children who engage in common classroom activities such as adult led exploration tasks or independent play. In this study adults in the guided play condition encouraged children to use the toys and props provided and participate in pretend play scenarios. Thirty-five children participated in small play groups for 30 minutes, three times a week, for three weeks. In the exploration group, adults encouraged children to explore the physical properties of materials and objects and guided the activity with questions, such as "What is this?" and "What do you think it can do?" Children were encouraged to interact with each other and the adult, but no pretense was introduced. In the independent play condition, children were given the same toys and props and played together without any adult intervention. After the intervention, students were asked to generate a story from a picture. Post intervention assessments revealed that children in the adult guided play group outperformed those in the independent play and adult guided exploration groups on all measures of narrative, namely, content, organization, and length. Students in the guided-play group told stories with more narrative information that were better organized than students in the other two groups, moreover, they told longer stories with more varied content. Although the results indicate that adult guided play is a beneficial classroom activity for narrative learning, there are some limitations to these findings. The comparison between guided play and guided exploration suggests that play is a key ingredient for narrative learning; however, the children in the exploration group had fewer opportunities to learn about

stories, as their activity was a science-based investigation. Thus, whether the observed gains are associated with enactment or with more opportunities to hear narratives remains unclear. Second, the results comparing the two play conditions suggest that adult support fostered narrative skills, but the duration and type of narrative play was not consistent across the two play groups. Children in the adult guided sessions spent more time in dramatizations; moreover, those children engaged in considerably more narrative behaviors, such as role-play, story episodes, and verbal interactions. Therefore, it is not possible to tease apart the roles of enactment and adult support in helping children to develop narrative skills. Nonetheless, the combination of enactment and adult guidance appears to help students produce more advanced narratives in terms of length, complexity, and organization in comparison to those in the unsupported play and guided exploration groups.

Another intervention study, done by Saltz & Johnson (1974), supports Dansky's findings that adult guided play is a useful narrative learning activity. Teachers conducted this model with small groups of children in 15-minute sessions, three times a week, over a four-month period. In this intervention, adults supported the play by narrating the story events, directing dramatization, taking on minor roles, and asking questions. In the activity-based condition, children listened to the same stories and completed typical preschool activities, such as cut and paste or coloring tasks related to the fairy tale. The authors did not provide any information about adult guidance during these activities; in fact, it is not clear if adults participated in any way. Once again, the children in the play condition told significantly better organized stories than the children in the control group, but it is unclear whether the activity condition included similar adult support and discussion during the classroom activities. Therefore, it remains unclear whether story-related discussions, enactment, or enactment plus discussion helped the students to produce better narratives. Furthermore, a follow-up study by Saltz et al. (1977) failed to replicate these results. However, the

combination of adult guidance and story-related play does appear to be beneficial for narrative learning.

More compelling data regarding the effects of adult support were reported by Pellegrini & Galda (1982; 1982), who compared the impact of adult guided enactment, adult guided discussion, and independent drawing conditions on students' story telling abilities. In this study, the adults took on a less directive role than seen in the Saltz and Johnson study. The adult support methods employed were a combination of guided and directed play. The adults participated as a character but they guided play by making suggestions and asking questions rather than by narrating and prompting. In the drawing condition, children independently drew pictures about the story without any adult involvement. Finally, in the discussion condition, adults led a group conversation about the story by asking evaluative and clarifying questions. Both play and discussion sessions included adult guidance, and the quantity of adult talk was comparable across these two groups. The intervention was comprised of three 30-minute sessions covering the same story each time. At the end of the third and final session, children were asked to retell the story. Children's stories were video-taped and coded, and assessed in terms of length, organization and content. An analysis of the children's post-intervention narratives revealed that the children in the adult guided play and discussion conditions produced more sophisticated stories than those in the drawing group. Additionally, the dramatization activity was more beneficial than the discussion activity; indicating that the play context is also an important element of narrative learning.

Some limitations should be considered when interpreting the results of this study. First, unlike the play and discussion conditions, the independent drawing condition did not involve any review of the story; therefore, it is possible that reviewing and repeating stories—thinking, listening, talking, rereading, or enacting—helps students. A second interpretation is that children

in the play and discussion conditions had similar exposure to narrative reviews; therefore, adult guided enactment is more beneficial than adult guided discussion. However, the adult support strategies differed across the two conditions. In the discussion group adults talked with the children about story characters and events that they enjoyed, while in the dramatization group, adults asked questions and made suggestions for dramatization ideas that were based on or related to the story events. It is possible that adult led discussions that focus on recapping key story events and features rather than on children's opinions and preferences would be similarly beneficial to dramatization activities. Overall, the results show that both types of adult supported activities helped the students tell better stories, suggesting that reviewing stories with adult guidance is a helpful approach.

One final study performed by Baumer et al. (2005) lends further support for the benefits of adult guided dramatization. The play activity in this study was completely adult led. Children were given props, assigned a character role, and directed to re-enact the story, in accordance with directed play methods. These researchers showed that kindergarteners who participated in story-related play sessions outperformed children who engaged in story-related discussion, drawing and writing activities on measures of narrative comprehension. The two contrasting conditions were designed to ensure that students had similar levels of adult support, as well as equal opportunities to engage in and produce narratives. In both conditions, an adult first read portions of a chapter book to students, followed by a group discussion. In the play condition, children then re-enacted the story under the direction of an adult, while the control group engaged in other story-related activities, such as reading, drawing, and writing. Although the story-related activities differed across the two conditions, the reading and discussion sessions were scripted and judged to be similar across the two conditions. Additionally, the duration of the intervention was matched

across the groups. Again, the play group produced significantly better stories than the control group, suggesting that adult supported enactment helps to foster narrative learning.

Taken together, the evidence is consistent and compelling that interventions that combine play and adult guidance help students tell more comprehensive and better organized stories than typical adult guided classroom activities. In the first two studies, adult supported play was beneficial for narrative learning, but the role of play could not be teased apart from the role of adult support. The last two studies, performed by Pellegrini & Galda (1982) and Baumer et al. (2005), confirm that adult supported review of narrative is beneficial, but there is no indication of the type of play strategies that foster narrative learning nor how these strategies influence the narrative play and learning experience.

The interventions reviewed here implemented various adult guidance methods during narrative play episodes. Some methods included extensive narration and direction from adults, others required adults to model play episodes, while others still, had adults participate minimally. To date, no studies have compared the different adult instructional practices and little is known about what guiding strategies are most beneficial for narrative learning. Moreover, the different guiding approaches are likely to create different play and narrative experiences for children. For example, it is possible that a structured play strategy might require children and adults to compose a complete narrative from the introduction of characters and settings, to building up to a climax, to finally reaching a conclusion. In a less structured play environment, participants might select and enact only enjoyable, memorable, or salient episodes of a given narrative, but not necessarily create a coherent or connected story thread. These studies do not provide sufficient insight into which play support strategies are most beneficial for narrative learning. The current study aims to address this gap by examining how different play support strategies can benefit young children's

narrative learning, firstly by comparing an adult directed enactment method to an adult guided play method, and secondly by examining the different narrative experiences that children encounter as a result of these support strategies. In addition, it is conducted in the context of an intervention designed to teach vocabulary that is used in the story. As a result, some of the narrative events are encoded in words that are being taught both explicitly and through encouraging children to use key words.

Using Vocabulary Instructions for Narrative Learning in the Classroom

Two intervention studies have implemented story-specific vocabulary instruction, together with other strategies, in order to develop young children's narrative skills. Although neither study examined the direct relationship between vocabulary and narrative learning, they do provide worthwhile insights into the role of vocabulary instruction for narrative competence. The first study investigated the effectiveness of small group sessions of book reading, story grammar instruction, vocabulary instruction, and play as methods to support early language development (Nielsen & Friesen 2012). Ten of the lowest performing students were selected from three kindergarten classes in the same school. Five students from each class were assigned to the intervention and the other five remained in class. The intervention involved 30-minute sessions, three times a week for 12 weeks. A total of 12 books and 42 vocabulary words were covered. Each session involved book reading, discussions about story grammar (setting, climaxes etc.), extensive vocabulary instruction (using pictures, providing definitions, demonstrating gestures where appropriate), and group retellings and enactments of stories. In the first six weeks the adult led the retelling activities, and for the final 6 weeks children were paired and asked to tell each other the

story with pictures and puppets. In total, each story was read twice, and retold or enacted three times, while story-vocabulary was discussed in all sessions.

Pre and post intervention assessments included a standardized language assessment, the Test of Oral Language Development (TOLD) and a standardized narrative assessment, Test of Narrative Language (TNL) which includes comprehension, making inferences, and oral narration subsets. Additionally, assessments of the intervention narratives and vocabulary were included. Participants in the intervention group were assessed on a narrative retell task where they were asked to retell the story covered the week before and this was scored for narrative information units. Post-test scores for TOLD revealed no significant differences between the groups. Additionally, although the intervention group almost doubled their retelling scores from pre to post intervention, the difference between the two groups on the post-test TNL standardized measure was not significant. Lastly, the experimental group made significantly larger gains on the intervention-based vocabulary assessment. The progress that children made on narrative production scores, suggests that the intervention fostered expressive narrative competencies, but the overall narrative language assessment revealed no significant difference in overall narrative proficiency. The TNL is a narrative measure that assesses many aspects of narrative competence, and it is possible that other skills covered in the TNL, such as interpretation, inferencing, and evaluation, which were not addressed in this intervention, accounted for the absence of results. Unfortunately, this paper did not publish the sub-scores to differentiate between inferencing and production skills. There are some further limitations to consider when interpreting the results. First, the sample was small and drawn from a single setting. Second, there is no evidence that the control group received similar exposure to narrative opportunities or that they were exposed to, or taught, any of the target words, which limits the opportunity to compare outcomes across the groups.

Third, it is unclear whether the adult guided retelling tasks, independent story telling tasks, or a combination of these, supported narrative learning. It is possible that the adult directed activities during the first six weeks of the intervention provided the necessary structure and modelling for children to become familiar with a narrative production task. Then, the subsequent independent retell activities in the last six weeks of the study, provided opportunities for children to practice their narrative skills. A core limitation of this study is that, due to the design, there is no opportunity to examine the relationship between the various teaching strategies implemented—vocabulary instruction, story grammar instruction, enactment, and retelling. The results show that children in the experimental condition made significant gains on both the intervention-specific measures (vocabulary and narrative), but there is no indication if, or how, these are related.

In the second intervention study, conducted by Gillam et al. (2014), two first grade classrooms were selected, one assigned to the experiment and the other to the control. The intervention was implemented by an experienced speech and language pathologist for 30 minutes, three times a week, for six weeks. The intervention curriculum involved extensive instruction in story grammar and included regular guided and independent narrative retelling activities. Explicit vocabulary instruction was embedded in the book reading activities, and words were either specific to story grammar features or specific to the narrative topic. In the control classroom, children continued with their regular literacy lessons which included book reading and story writing activities but were not focused on these. Vocabulary instruction was included as part of the control group literacy lesson and covered general tier 2 vocabulary words. Once again, the TNL was used for pre and post intervention assessments. Children were divided into high and low language ability groups according to their TNL. An intervention-specific vocabulary assessment was also administered pre and post intervention. Pre-post comparison showed that, in the experimental

classroom, high-language learners made significant gains on their narrative and vocabulary assessments, while low-language learners only made significant gains on vocabulary. Moreover, the high-language learners made greater narrative gains than the low-language learners. The control children did not make significant gains on either narrative or vocabulary. Comparison of the two groups showed that children in the intervention made significantly greater gains for both vocabulary and narrative than those in the control class. The difference in vocabulary gains between the experimental and control groups is expected due the fact that the control group were not explicitly taught (or exposed to) the intervention words, while the experimental group were. Likewise, the difference in narrative gains between the experimental and control groups is unsurprising in light of the fact that the control group did not receive any focused narrative instruction, and there is no indication that they spent similar time on story activities as the experimental group.

Another consideration is that the language split was based on the TNL assessment, and therefore the high-language group essentially started the intervention with more extensive story knowledge than the low-language learners. Their pre-existing knowledge may have provided crucial foundations needed to build narrative understanding. The low-language learners may have needed more assistance with foundational narrative skills (possibly from a more structured approach, such as that used in the first study which saw significant narrative growth for low-language learners) in order to benefit from the intervention methods used in this second study. As with the previous study, there is no indication that the vocabulary instruction was beneficial or in any way related to narrative gains. Nonetheless, these findings lend further support to the hypothesis that narrative activities combined with vocabulary instruction is beneficial for young children's narrative learning, particularly those with lower language proficiencies.

The findings from these two studies provide a starting place for further, more systematic research into the instructional strategies that support narrative learning. Although the findings from the two interventions do not directly connect children's vocabulary and narrative learning, they do indicate that vocabulary instruction within the narrative setting is an effective teaching strategy for word learning, and this may, in turn, support narrative learning. To date, no studies have directly addressed the question of whether story-related vocabulary instruction can foster narrative growth. This study sought to add to the growing body of literature by identifying the possible associations between vocabulary learning and narrative competence.

Implications for the Current Study

While the evidence is convincing that adult supported play activities are worthwhile, further investigation is needed in order to maximize the benefits in the classroom. Prior studies have found that adult guided play activities are useful for fostering narrative learning in the preschool classroom (Dansky 1980b; Pellegrini & Galda 1982; Baumer et al. 2005); however these interventions have implemented a variety of play and adult support practices. Play activities in the preschool classroom can range from adult directed to adult guided to adult supervised. On one end of the spectrum is directed play, where adults organize and narrate a story dramatization with children. On the other end is supervised play, where adults provide appropriate resources but remain outside the play world. In between these two is guided-play, where adults join in the pretense and follow the children's lead. There is some evidence that adult guided play can foster narrative competency (Dansky 1980b; Pellegrini & Galda 1982; Baumer et al. 2005), but many questions remain regarding how much, and what type of support adults should provide during play.

Secondly, there is compelling evidence that techniques such as open questions, confirmations, and encouragements are especially powerful in helping children to tell good stories. Several researchers have highlighted the need for further investigation into other features of adult language that can bolster narrative competence, particularly vocabulary (Kim et al. 2011; Demir et al. 2015; Ukrainetz et al. 2005; Kang et al. 2009). Word knowledge likely plays an essential role in the ability to comprehend and produce narratives. A few studies report a positive relationship between vocabulary and narrative competence, but results are mixed and based largely on correlational data (Uccelli & Páez 2007; Tabors et al. 2001; Dickinson & Tabors 2001; Gutierrez-Clellen & Quinn 1993). Finally, studies have revealed that delivering vocabulary instruction as a part of a narrative intervention can be a successful means of teaching children words.

Current Study

This research identifies specific adult play-support strategies, and the role of vocabulary learning, as mechanisms for developing narrative competence. Intervention designs and methodologies can benefit from a more in-depth understanding of the adult support strategies that facilitate children's narrative development. Identifying specific play guidance and instructional strategies may help educators to make effective narrative learning opportunities available for preschoolers.

This paper explores two possible pathways by which adults may support narrative learning: 1) by improving the representation of story events through guided play and 2) by fostering the learning of the vocabulary needed to understand the story.

The following hypotheses guide the proposed study:

1. Narrative comprehension is related to knowledge of story-specific vocabulary and the learning of story-specific vocabulary during book reading and play episodes will relate to better comprehension of narratives.

2. Improved knowledge of story-specific vocabulary knowledge mediates the relationship between adult directed play and story comprehension.

3. Adult supported, in contrast to free play, offers opportunities for young children to participate in the construction of complete and structured narratives which support story comprehension. Thus, children who engage in adult directed play will demonstrate improved comprehension of stories in comparison to children who engage in unsupported play.

The following research questions will be investigated in the proposed study:

1. Are narrative comprehension skills associated with pre-existing story-specific vocabulary knowledge?

2. Do gains in book-related vocabulary knowledge predict narrative comprehension scores at the end of the intervention, when controlling for pretest scores, age, attendance, and book theme?

3. Is narrative comprehension ability related to participation in adult supported versus independent play?

4. Are the effects of play condition on narrative comprehension mediated by vocabulary learning?

5. Are there condition differences in the extent to which children experienced a complete and coherent review of the narrative, and are these experiences related to children's narrative comprehension and production?

CHAPTER III

METHODS: RESEARCH DESIGN AND MEASURES

Study Description

The present study was conducted as part of *Read-Play-Learn* (RPL), (Institute of Education Sciences, U.S. Department of Education, Grant R324E060088A to Vanderbilt University). This project aimed to increase the vocabulary knowledge of low-income preschoolers through a combined book reading and play method. Specially trained Language Specialists (LS) delivered the intervention with small groups of children. Videos were collected of the intervention sessions which included book reading, vocabulary instruction, and play sessions. Additionally, students were assessed pre and post intervention and the resulting data were used to describe the relationship between play, word learning, and narrative learning. Data for the present study come from the first year, phase II, of a three-year project.

Participants

Child Participants

The sample included 145 children who were recruited from 18 pre-K classrooms from a state-funded program for low-income families in the Southern region of the United States. Approximately nine children per classroom participated. Recruitment focused on children who did not have did not have an Individualized Education Plan (IEP) and who were not classified as English Language Learners. Fifteen children were later identified as ELL by teacher, but they were

considered to have sufficient English to understand stories and follow directions. The majority of the students were African American (75.9%), White, 11.0%, Hispanic or Latino 9.0%). The sample is comprised on 61 boys (42.1%), and 84 girls (57.9%). The average age of the sample was 59.9 months at pre-test. On average children attended 7.45 ($SD = 0.927$) sessions out of a possible eight. All children in this sample attended at least four sessions, with 95.2% attending 6 or more days.

Adult Participants

Nine Language Specialists (LS's) delivered the reading and play intervention. All possessed Bachelors or Masters degrees plus experience in early childhood settings. They were trained on the intervention procedures and where necessary provided scripts or guides to conduct the reading, vocabulary, and play sessions.

Procedures

This study was conducted over a 2-month period, from April to May 2012. Children were pre-tested and post-tested by members of the research team for knowledge of target vocabulary one week prior to and following the intervention, respectively. Children were randomly assigned to one of three play conditions within classrooms; and classrooms were randomly assigned to one of two themes. The play intervention included an adult directed play (DP), an adult guided play (GP), and an independent or free play (FP) condition. Language Specialists read to mixed-gender groups of three children in a quiet location outside the classroom for eight sessions over two weeks. Each book reading was followed by a ten-minute play session which was recorded to capture the play conversations and behaviors of the children and adults. At the end of the intervention children

were assessed on vocabulary and narrative measures. Fidelity of implementation was tracked by video recording and coding a subset of intervention sessions.

Themes, Books, and Vocabulary

The reading and play intervention was developed around two themes, dragons and farms. Two books were selected for each theme and followed classic narrative patterns. The books chosen for the dragon theme were *The Knight and the Dragon* (dePaola, 1980) and *Dragon for Breakfast* (McMullen & McMullen, 1990); while books for the farm theme were *Farmer Duck* (Waddell & Oxenbury, 1991) and *Pumpkin Soup* (Cooper, 1998). Parts of the story text were amended to ensure that all books were comparable in terms of length, text complexity, and vocabulary.

Twenty target words were selected per theme, including a mix of abstract nouns, concrete nouns, verbs, adjectives, and spatial terms. All selected words were considered tier 2, or sophisticated words of high utility. Additional exposure words were inserted in the texts as necessary to ensure that all books included 10 tier 2 words (Beck et al. 2002) (see Appendix A).

Words were selected based on several criteria.

1. *Complexity*: words ranked as tier 2 or sophisticated words of high utility (Beck et al., 2002).

2. *Child friendliness*: words that could be explained in child-friendly terms

3. *Distinctiveness*: words that are semantically and phonologically distinct from one another.

4. *Appropriateness*: Biemiller (2010) provides a list of words which are rated in terms of appropriateness for instruction by grade level.

5. *Familiarity*: Results from a previous iteration of the study served to identify and exclude words that more than 30% of children correctly identified at pre-test.

Book Reading

Each book was read four consecutive times and these sessions lasted approximately 10 minutes. LS's read the story and explained each word during the reading, as the words occurred in the text, and again after each reading was completed, as part of a story review. The explanation consisted of (a) reading the word in the story text, (b) drawing attention to the word by commenting and pointing to the picture to illustrate meaning (e.g., "look at the dragon's nose; these are his *nostrils*" [pointing to the nose in the picture]); (c) defining the word in concise, child-friendly language (e.g., *nostrils* are the little holes in your nose); (d) using gestures, where possible, to reinforce meaning (e.g., can you point to your *nostrils*? Point to nostrils and breathe deeply); (e) providing an example of the word in a different context (e.g., people use *nostrils* to breathe air, not fire). On days 1 and 3 of the readings, five focus words received rich explanations (described above) while the remaining five words were defined briefly. On days 2 and 4, the focus words were switched around. During the 3rd and 4th readings, adults elicited verbal participation from children to reinforce each word's phonological and meaning representations (e.g., "what do we call the little holes in our noses?").

Play Sessions

Ten-minute play sessions immediately followed each book reading. In two conditions children participated in teacher-led play and one condition children played independently. In the teacher-led sessions the five focus words from the reading sessions were included as part of explicit

instruction during that day's play session. Across play conditions, LS's were instructed to use focus words five times per session for a total of 10 exposures during play per word. A play setting was provided for each theme: a castle for the dragon theme and a farmhouse for the farm theme; and play prop kits were developed for all books. These kits included toys that were chosen to represent target concrete nouns (e.g., a *throne*) or to encourage the enactment of target verbs (e.g., a horse for the verb *gallop*).

Play Conditions

Three play conditions were developed to test the effects of adult supported play on children's word learning: Directed Play, Guided Play, and Free Play. Adults used different methods of narrative and play support in directed and guided play, and no support was offered in free play.

In *Directed Play* (DP), the LS assigned a role to each child in the small group and led them in a reenactment of the story. As the LS retold the story, she prompted children to act out events that featured target words, and defined the words as they did so. The LS was provided with a detailed script including all narration, direction, and suggested prompts to encourage children to enact the story episodes. The script included the entire story as well as instructional talk for the target vocabulary words for that sessions. For example, the LS first narrated a key event: "The knight and the dragon opened a restaurant together. The dragon cooked the hamburgers with fire he blew from his _nostrils_." Next, she prompted a reenactment of the story episode and provided a definition for any key vocabulary used: "Make the dragon blow fire from his _nostrils_. The _nostrils_ are the holes on his nose." During play sessions 3 and 4, the LS asked questions to encourage children's thinking about word meanings or asked children to identify the prop that represented a

target word: "Dragon, can you show us your _scales_?" This condition was akin to story dramatization.

In *Guided Play* (GP) the LS encouraged children to engage in play but did not direct them; rather, children were free to act out the story or invent their own pretend scenarios. The LS waited for children to initiate playful episodes and then entered the play as a character. In this condition the LS did not lead the play, but instead, was instructed to extend children's play ideas where appropriate. The LS was permitted to prompt play ideas when necessary, in order to prompt play and incorporate vocabulary instruction. For example, "*Let's imagine that the child puts the knight on the horse and makes him _charge_. The knight _accidentally_ falls off the horse*". This gives the adult the opportunity to focus on the word accidentally. She starts with: A definition that is embedded in a conversation starter: *'Wow! The knight fell off his horse! But, he didn't mean to do it, it happened _accidentally_.'* Suggested questions to use during this interaction were: "*Did the knight mean to fall off the horse or did that happen _accidentally_?*" and "*The knight and dragon don't seem to be good at fighting! What other things can happen to the knight and dragon accidentally when they're fighting?*". Language specialists were provided with play guidance materials that included detailed descriptions on the play method, play ideas, appropriate questioning and prompting, and scripting for vocabulary instruction. This play style was similar to children's natural dramatic play.

During *Free Play* (FP), children were provided with the same toys and invited to play. In this condition, the LSs remained outside of the play scenario and did not guide or direct their play in any way.

Measures

Vocabulary Measure

A vocabulary assessment was created and modeled after the PPVT-4. Similar multiple choice tests have been widely used to assess target word comprehension (Sénéchal 1997; Blewitt et al. 2009; Penno et al. 2002). For this task, the examiner stated a word and asked the child to select the correct referent from three illustrations. The participant was shown three pictures for each stated word: a correct referent, a conceptually related foil (e.g., fish for the target word *pond*) and a thematically related foil (e.g., stream for the target word *pond*). Another example for the target word *cabin*, was a picture of a tent for the conceptual foil and a picture of logs for the thematic foil (See Appendix B). The pictures used in the testing were different from those used during the intervention. Four practice items depicting familiar objects and actions were used at the beginning of the test to be certain that children understood the task.

Narrative Comprehension

To measure children's narrative comprehension, a new measure was designed and modeled after the Renfrew Bus Story Test (Cowley & Glasgow 1994) and was administered at posttest. In this task, children used a booklet with 11 illustrations from each book to retell the story (See Appendix C). Illustrations were taken from the original book and selected to depict the main events of the story. At the start of the assessment, the examiner showed the child the book cover and said, "Today, it's your turn to tell the story." Turning to page 1, "I'll get you started: There once was a…" If children did not respond they were prompted with "what is happening here?" If they

remained unresponsive, the examiner would tell them to go on to the next page. Children's narratives were scored as they told their story. All children's responses were video-taped.

Narrative Information Assessment for Preschoolers (NIA-P). The coding schema used in this study focused on assessing the content of children's retellings and was adapted from the Renfrew Bus Story information score. Basic information, such as character introductions, orientations, and main events or actions of the story, was given 1 point each. Additional points were awarded for providing narrative elaborations, such as character motivations (e.g., they learned to fight), character traits (e.g., he was grumpy), descriptions (e.g., it was very dark), temporal information (e.g., the fight began), character thoughts and emotions (e.g., the princess didn't want them to fight). Unlike the Renfrew Information score, the points per page were not limited for two important reasons: 1) some illustrations from the story lend themselves to more narration and thus it was appropriate to provide more than three units of information. Furthermore, the information units offered by children were only considered if they were relevant and appropriate at *that point* in the story. 2) It was possible to provide information a page in advance or behind the appointed score page, and still recount a cohesive and well-structured story. Limiting the score per page would penalize children who narrated more on a single page but less on others even though the story was appropriately retold. During the assessment, examiners scored children's responses by marking the information items on a scoring rubric thus scoring was completed as children told their story (see Appendix D). Any queries or unknown items were noted and later checked and scored by a master coder. This assessment and coding schema were piloted prior to the intervention with 16 four-year-olds.

Reliability. All assessments were coded on-site, with pen and paper, using a scoring rubric, which were then captured electronically. Twenty-five percent of the assessments were selected for

dual-coding. These assessments were coded directly from the video recordings and were captured electronically. Four coders were randomly assigned a selection of videos from each play condition. Due to the number of coders and the unbalanced assignment matrix, Krippendorff's alpha was used to calculate interrater reliability. This coefficient has several advantages over other measures such as percentage agreement, Cohen's Kappa, or intraclass correlations in that it can be used with multiple coders, can account for large and small sample sizes, can accommodate missing data, and can be used for ordinal, interval or ratio variables (Hayes & Krippendorff 2007). Krippendorff's alpha was calculated in SPSS using the KAPLHA macro (Hayes & Krippendorff 2007). Overall interrater reliability for NIA-P scoring was high (α=0.976, CI [0.970, 0.982]). The interrater reliability results for specific scoring categories is given in Table 1. All k-alpha scores were above 0.9 except for the resolution score (α=0.863, CI [0.774, 0.893]), however scores above 0.8 are considered to be a good result, particularly for more complex coding systems.

Table 1. *Krippendorff's Coefficient Results*

	α	95% CI [LL, UL]	n	Number of Coders	Number of Coding Pairs
Total Score	0.976	[0.970, 0.982]	41	5	116
Orientations Score	0.908	[0.885, 0.962]	41	5	116
Rising Actions Score	0.922	[0.884, 0.933]	41	5	116
Climax Score	0.928	[0.885, 0.947]	41	5	116
Resolutions Score	0.863	[0.774, 0.893]	41	5	116

Note: Number of bootstrap samples = 5000

Play Videos

Data used for this study included video recordings collected during the play sessions. The purpose of the video collection in the larger study was to analyze fidelity of implementation; for

this reason, only a subset of sessions was recorded. For this study, a selection of the collected play videos was identified in order to code the number and sequence of story episodes during play sessions. Videos were selected to track story episodes across all play group scenarios (DP, GP, FP) for each day (day 1 to 4), for each LS (n=8). Thus 12 videos were selected for each LS, making a total of 96 videos (see Appendix E). However, due to technical issues during intervention sessions, some videos were missing or incomplete. Thirteen missing videos were from the free play scenario, however as no adult was involved in this play session, substitute free play videos were selected based on theme, book, play day match. Three videos were missing from the direct play scenario. It was decided that the story episodes in these videos would be influenced by the adult participation, and thus could not be substituted. No LS had more than one missing DP video. All play sessions were coded directly from the video using a program called BORIS. This is an open-source event-logging software for video, audio or live observation coding (Friard & Gamba 2016).

Identifying narrative play episodes. The distinction between simple pretense and narrative play can be vague. From her studies of preschoolers' play, Engel (2005) proposed that pretense involves children moving characters or toys and making appropriate sounds as they pretend to navigate them around the play scene. Narrative play, on the other hand, involves the use of language to create stories that explore alternative worlds and experiences. Using this distinction, we devised a rubric to categorize narrative play episodes based on adult and child verbal contributions. Utterance coding is a widely-used technique used for coding verbal interactions, and this method applies an event code to any meaningful unit of speech, as defined by the coding rubric. This approach was selected for this analysis as it is well suited for identifying frequencies, rates, and sequences of behaviors (Chorney et al. 2015). For this study, an utterance coding schema

was developed by the author to identify the number and type of story episodes enacted during the play sessions. First, key narrative events were identified for each book. Then two different coders, familiar with the stories, separately watched a sample of videos to identify examples of utterances, questions, and responses that represented the key story episodes. From this process, a detailed descriptor was devised for each story event to guide coding. The events were then combined into four structural categories that were common across both themes: orientations (characters and locations), rising actions (events leading up to the climax of the story), story climax, and resolution (see Appendix F for coding definitions and descriptors). While there are many different schemas for categorizing narrative features, we focused on the components that are most relevant to preschooler narrative ability (Gillam et al. 2014). Each event-type was also coded according to the subject (See Table 2 for full list of codes).

It should be noted that all play utterances were coded according to narrative events covered in the books, regardless of whether the play event was single unconnected play event, a short action sequence, or part of a larger story sequence. For example, a cooking activity in the dragon theme, would have been coded as a resolution event, as depicted in the book, regardless of whether the play episode was enacted as a concluding story episode or an unconnected play episode in its own right.

Orientations were only coded once per item, per subject, at the first instance of its mention. For example, the first time a child introduced the dragon character, this was coded as an orientation, but any further introduction or mention of the dragon from any of the children were not coded. The same applied for the adult. This was decided for three reasons: First, a review of the play scenarios during the development process revealed that there was frequently no clear distinction between a character introduction and a simple naming or mention of a character. For

example, "*here is the princess*" is a clear introduction of the princess, but most often children used phrases like "*I want to be the princess*", "*where is the princess?*", "*you have my princess*", or simply "*Princess!*". These can be difficult to classify as orientations especially if the character or figure has been recently introduced in the play scenario or is not present in the play frame. Second, in a typical play environment, these phrases would be considered meaningful character introductions, particularly if the actor produced the character figurine. However, these types of phrases were present across varying contexts, e.g. behavior management, conflict situations, non-story chatter, or general management such as clearing up, and the boundary between these contexts and narrative enactment were not always clear. Lastly, these types of statements were so frequent, that it was decided it would too onerous to attempt to classify these. Therefore, only the first mention of the character by any child and by the adult was coded.

Finally, a non-verbal code was included because children regularly responded to adult's statements, prompts and questions with one-word answers, monosyllabic responses, or non-verbal behaviors. While the child did not provide the narrative language themselves, they were participating in narrative play accompanied by narrative language, albeit provided by another player. In order to capture this aspect of participation, the non-verbal code was included. The non-verbal code was only applied when the child did not accompany their own play with narrative talk, but instead relied on the adult to communicate the appropriate language.

In order to ensure reliable and consistent coding of all play participants, adult and child contributions were coded separately. First, adult talk was coded, together with any appropriate non-verbal responses from children. This was done to ensure that non-verbal responses from children were carefully matched to adult utterances. Next, child activity and talk were coded according to the same story item criteria. Each play session therefore comprised three narrative participation scores:

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adult verbal (except free play where the adult did not participate), child verbal, and child non-verbal.

Table 2. *Names and definitions of variables coded to describe the nature of narrative play during play sessions*

Variable Coded	Definition
Child orientations	Count of the first references to any story character or location by any child in the play group.
Adult orientations	Count of the first references to any story character or location by the adult.
Orientations	Count of all references to story-specific rising actions by any child or adult in the play session. (*Child orientations + Adult orientations*)
Child rising actions	Count of all references to story-specific rising actions by any child in the play group.
Adult rising actions	Count of all references to story-specific rising actions by the adult.
Rising Actions	Count of all references to story-specific rising actions by any child or adult. (*Child rising actions + Adult rising actions*)
Child climaxes	Count of all references to story-specific climaxes by any child in the play group.
Adult climaxes	Count of all references to story-specific climaxes by the adult.
Climaxes	Count of all references to story-specific climaxes by any child or adult. (*Child climaxes + Adult climaxes*)
Child resolutions	Count of all references to story-specific resolutions by any child in the play group.
Adult resolutions	Count of all references to story-specific resolutions by the adult.
Resolutions	Count of all references to story-specific resolutions by any child or adult. (*Child resolutions + Adult resolutions*)
Non-verbal response	Count of any non-verbal behavior performed by a child that accompanied, or was in response to, (and matched) a verbal narrative reference provided by another play participant (including the adult).

Note. To control for time spent in instruction, all counts were summed, then multiplied by the session duration as a proportion of a 10-minute session (score .x 10/session duration).

Reliability. In order to ensure reliable use of the play coding instrument, a post-graduate student coded a randomly selected subset of 40% of transcripts and videos. This second coder was trained to score adult and child activity in the group session videos using practice videos and once they achieved a priori inter-rater reliability level of 90%, they proceeded on to code the play sessions for this study. The subset of videos was then rated by the second coder. If 90% agreement was not obtained, both coders were required to consult and clarify differences, check their assigned videos for errors, and make any corrections. Intraclass correlation coefficient (ICC) was calculated to assess reliability for each score. Reliability was below criterion on two occasions (89% and 83% match). While there are no standard scores for acceptable levels of ICC, many researchers follow the following guidelines: ICC values less than 0.5 are considered poor, 0.5 to 0.75 are moderate, 0.75 to 0.9 are good, and greater than 0.9 is excellent. ICC estimates and their confidence intervals were calculated using SPSS based on mean-rating ($k=2$), absolute agreement, 2-way random-effects model. A high degree of reliability was found between raters. The average measure ICC was 0.99 with a 95% confidence interval from 0.991 to 0.999 ($F(32)= 0.999$, $p<.001$). Interrater reliability for specific categories is given below in Table 3.

Table 3. *Reliability Intraclass Correlations by Subject and Event Type*

	ICC	95% CI	F	df	p
ICC by subject					
Adult	0.998	0.995, 0.999	812.061	23	0.000
Child	0.988	0.958, 0.995	234.711	32	0.000
ICC by event type					
Orientations	0.915	0.836, 0.957	22.632	32	0.000
Rising Actions	0.983	0.966, 0.992	118.282	32	0.000
Climax	0.986	0.970, 0.993	137.244	30	0.000
Resolutions	0.978	0.949, 0.991	89.939	22	0.000
Non-Verbal	0.993	0.985, 0.996	267.114	31	0.000

*ICC estimates and their 95% confident intervals were calculated based on a mean-rating ($k = 2$), absolute-agreement, 2-way random-effects model. All results reported here are single measures ICC.

Data Analyses

Data analyses were conducted in SPSS version 24, which allowed for multilevel models to be constructed. Two data sets were used in this study, the first, measured at child level, included vocabulary assessment scores, NIA-P assessment scores, and covariates such as age, attendance, gender, and theme. The second data set was taken from group play videos, and measured behaviors at play group level, including adult verbal contributions, child verbal contributions, child non-verbal contributions; play duration was included as a covariate. We used Cohen's d standardized mean difference effect sizes to interpret the magnitude of effects between conditions. For linear relationships, we estimated effect sizes by multiplying the coefficient of the predictor by its standard deviation, then dividing by the standard deviation of the dependent variable. This effect size is equivalent to Cohen's d indicates the change in the outcome variable in standard deviation units when the predictor increases by a standard deviation.

Vocabulary and Narrative Assessment Data

Child level assessment data was used for questions one to four. In order to compare play conditions, the groups were dummy coded for comparison between adult guided play conditions and the independent play condition. Thus, GP and FP were compared, with FP coded as the reference group, and DP and FP were coded for comparison, with FP coded as the reference group. Theme was also dummy coded with the Farm theme as the reference group. Attendance was calculated as the number of days the child attended the intervention sessions. This was included as it was hypothesized that children's vocabulary learning may be greater due to more regular participation in the read and play sessions. Theme, age, and vocabulary pre-test score were included as covariates in all models. Pearson's correlation was run to check for collinearity among variables (see Appendix G).

Due to the nested nature of the data, random intercept linear mixed models were used to analyze the data. In the original data set, children were nested within play groups, which were nested in classrooms which were nested within Language Specialists. Within a given classroom, children were randomly assigned to play group conditions, and randomly assigned to book themes at classroom level. Firstly, a four-level null model was fitted for the narrative outcome. The intraclass correlation (ICC) for the null model determined the estimate of the proportion of variance in the outcome that is attributable to child, play group, classroom, and specialist levels. The majority of the variance was at child level (level 1) and was significant (95% of total variance). The remaining variance occurred between classrooms (5% of total variance) but this was not significant. Child, play group, and classroom levels were retained in the model to account for the nested nature of the data. The level of variance at the specialist level was determined to be zero, therefore this level was dropped from all further analysis. All remaining models were three-level

models. A build-up stepwise strategy was used to determine the best model. Model goodness-of-fit was evaluated using the Schwarz's Bayesian Criterion (BIC) and chi-square test of deviance and the most parsimonious model was selected.

The mediation analysis was conducted according to the model outlined in Bauer et al. (2006) for a lower level mediation model (2-1-1 level) using indicator variables in SPSS. This model is similar to the commonly used single-level path by Baron & Kenny (1986) (See Figure 1) in that four conditions must be established:

1) The independent variable significantly predicts the outcome (Path c). This establishes that there is an effect that may be mediated.

2) The independent variable significantly accounts for variations in the presumed mediator (Path a).

3) The presumed mediator significantly accounts for variations in the outcome (Path b).

4) The significant relationship found between the independent and dependent variable (Path c), is no longer significant when path a and path b are controlled for (Path c').

(Baron & Kenny 1986)
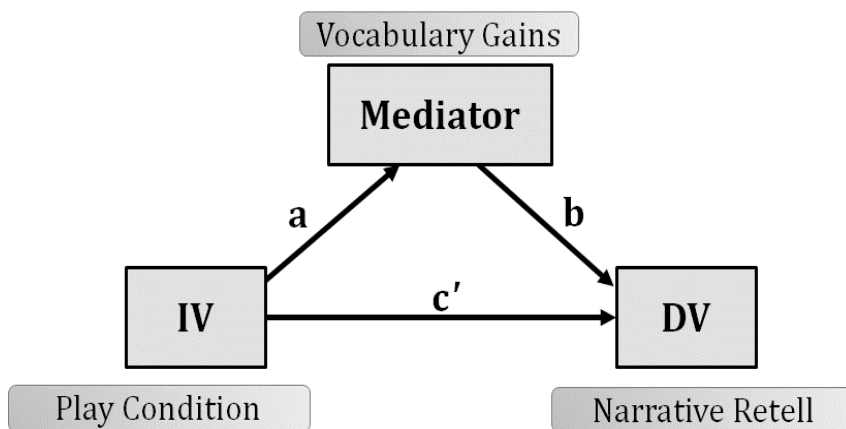
Figure 1. Mediation Path Model

The nested nature of the data means that children within playgroups and classrooms, shared common experiences, and therefore the assumption of independence required for a two-step approach is violated (Bauer et al. 2006). The multivariate approach proposed by Bauer et al. (2006) accounts for this by stacking the data outcomes so that all three paths of the mediation model can be analyzed simultaneously and thus allows one to estimate the covariance of the random effects within the different models. As shown in Figure 1, a new outcome variable was created by stacking the dependent variables, NIA-P score and vocabulary gain score, into a single variable (*Narr_Vocab_Scores*). Indicator variables for NIA-P score and vocabulary were created to distinguish these two stacked outcomes. These were dummy coded (0 or 1) with the vocabulary indicator variable set to 1 when the outcome referred to the mediator, vocabulary (*DVocab*), and the play indicator variable was set to 1 when the NIA-P score referred to play conditions (*DNarr*). The predictor variables were included for each path (*PlayDPforVocab* and *PlayGPforVocab* for path a; *VocabForNarr* for path b; *PlayDPforNarr* and *PlayGPforNarr* for path c'). Finally, an index value (*dv*) was created. This was used to obtain the different residual variances for the two stacked outcome, NIA-P score and vocabulary. For the mediation model, a residualized gain score was calculated to show children's vocabulary growth during the intervention. This gain score was created by running a regression of pre-test vocabulary scores predicting post-test scores and saving the residual score. This gain score represents the posttest scores, while controlling for pretest differences. All covariates, age, attendance, and vocabulary pre-test score, were gran-mean-centered at the sample level which allows for a better understanding of the relationships among level 1 variables.

Finally, to determine the significance of the mediation, we conducted a Monte Carlo simulation with 20,000 replications to obtain a confidence interval around the indirect effect. The

Monte Carlo Method for Assessing Mediation (MCMAM) was used because it accounts for the non-normal sampling distribution of the indirect effect and has been shown to be more accurate than the traditional Sobel test of indirect effects (Preacher & Selig 2012).

ChildID	Play Condition	PlayGroup ID	Classroom ID	Age_ CGM	Attend_ CGM	Theme	Guided_ Free_DC	Directed_ Free_D C	Vocabulary Gains	NIA-P Score
015	GP	3	1	-4.94	0.55	0	0	1	-0.23	12.00
031	FP	2	1	-2.94	-2.45	1	1	1	-1.01	21.00
034	DP	1	1	-1.94	0.55	0	1	0	-0.17	19.00
038	DP	1	1	2.06	-0.45	1	1	0	-1.45	20.00
081	FP	2	1	4.06	0.55	0	1	1	-0.14	2.00
086	GP	3	1	5.06	0.55	0	0	1	1.17	22.00
095	GP	3	1	5.06	-0.45	1	0	1	-0.45	15.00

ChildID	PlayGrou pID	Classroo mID	Age_ CGM	Attend_ CGM	Theme	Narr_Vocab _Scores	VocabFor Narr	DVocab	PlayDPfor Vocab	PlayGPfor Vocab	DNarr	PlayDPfor Recall	PlayGPfor Recall	dv
015	3	1	-4.94	0.55	0	-0.23	0.00	1	0	1	0	0	0	1
015	3	1	-4.94	0.55	0	12.00	-0.23	0	0	0	1	0	1	0
031	2	1	-2.94	-2.45	1	-1.01	0.00	1	0	0	0	0	0	1
031	2	1	-2.94	-2.45	1	21.00	-1.01	0	0	0	1	0	0	0
034	1	1	-1.94	0.55	0	-0.17	0.00	1	1	0	0	0	0	1
034	1	1	-1.94	0.55	0	19.00	-0.17	0	0	0	1	1	0	0
038	1	1	2.06	-0.45	1	-1.45	0.00	1	1	0	0	0	0	1
038	1	1	2.06	-0.45	1	18.00	-1.45	0	0	0	1	1	0	0
081	2	1	4.06	0.55	0	-0.14	0.00	1	0	0	0	0	0	1
081	2	1	4.06	0.55	0	2.00	-0.14	0	0	0	1	0	0	0
086	3	1	5.06	0.55	0	1.17	0.00	1	0	1	0	0	0	1
086	3	1	5.06	0.55	0	22.00	1.17	0	0	0	1	0	1	0
095	3	1	5.06	-0.45	1	-0.45	0.00	1	0	1	0	0	0	1
095	3	1	5.06	-0.45	1	15.00	-0.45	0	0	0	1	0	1	0

Figure 2. Data Transformation into a stacked dataset with a combined outcome variable, predictor variables, and covariates

Play Session Video Data

The final research question examined the narrative construction during play; therefore, the final analyses used data from the play sessions. Once again, data analyses were conducted in SPSS version 24, to allow for multilevel models to be constructed. Narrative play timelines were segmented according to a minute by minute breakdown of the play progression and assigned a time from one to ten. Play sessions were scheduled to last 10 minutes and so any narrative play or

commentary that occurred after this time were grouped and labelled as '11+'. All event codes after 10 minutes were included in the analysis to ensure that all narrative enactment and event-types were accounted for. Descriptive statistics for the duration of play session by condition can be seen in Table 4. The average duration of play sessions for directed play (*M*=9.84, *SD*=1.59) varied more than those for Guided (*M*=10.35, *SD*=0.82) and Free Play (*M*=10.05, *SD*=0.86). This is because GP and FP play session times were regulated by a timer which rang when 10 minutes was done; while DP play sessions were governed by an enactment script. Although the enactment script was scheduled to last 10 minutes, some play sessions ran over when factors such as behavior management, restroom breaks, or other non-instructional interruptions occurred; while others flowed quickly and the story enactment was finished before the 10-minute mark.

Table 4. *Descriptive Statistics: Duration (in minutes) of Play Session by Condition*

Play condition	N	Min	Max	Mean	SD
Directed Play	29	7.13	13.26	9.84	1.59
Guided play	32	7.93	12.02	10.35	0.82
Free Play	32	6.97	11.20	10.05	0.86

Four play sessions (4.3%) ran over eleven minutes, and a review of these showed that these play sessions were slow to get started due to management and organization issues. Fourteen sessions (15.1%) ended before the 9-minute mark, and 75 play sessions (80.6%) lasted between 9 and 11 minutes. To control for time spent in play sessions, behaviors were summed across the play session, then divided by the proportional length of the play session (in minutes). For example, a behavior unit from a video session that lasted 8.5 minutes would be calculated as 1 x (10/8.5) =

1.2 points, while a behavior unit in a session that lasted 11.5 minutes would be valued as 1 x (10/11.5) = 0.9 points.

In this analysis we were interested in comparing the higher performing direct play group to the guided play and free play conditions. Thus, GP and DP were compared, with DP coded as the reference group, and FP and DP were coded for comparison, with DP coded as the reference group. Theme was also dummy coded with the Farm theme as the reference group. Theme was also dummy coded with Farm theme as the reference group. Pearson's correlation was run to check for collinearity among the narrative play variables (see Appendix H). We used multilevel repeated measures models to account for interdependency among observations; in this data set repeated play sessions ($n=93$) within play groups ($n=24$), which were nested within classrooms ($n=12$), which were nested in Language Specialists ($n=8$). A four-level null model was fitted for each outcome, adult verbal narrative units, child verbal narrative units, and child non-verbal narrative units. The intraclass correlations from an unconditional model for adult verbal outcome indicated that 9.3% ($p<0.01$) of the variance was attributed to differences between play sessions, and 90.7% ($p<0.01$) of the variance was due to differences between playgroups, and no variance at the classroom or specialist level. For the child verbal measure, 75.2% ($p<0.01$) of the variance was attributed to differences between play sessions, and 18.8% of the variance was due to differences between playgroups but was found to be not significant ($p=.182$). Differences between classrooms accounted for 6% of the variance, however this was not significant ($p=.777$). No variance was found at the specialist level. For the child non-verbal measure, 9.1% ($p<0.01$) of the variance was attributed to differences between play sessions, and 90.9% ($p<0.01$) of the variance was due to differences between playgroups, and no variance at the classroom or specialist level. Play session, play group, and classroom levels were retained in the model to account for the nested nature of the

data. Classroom was retained as theme was a covariate at this level. Specialist level was dropped from all further analysis. All remaining models were three-level models. Unstructured covariance structure was selected as the number of repeats is small (n=4), and the data are balanced and complete. Additionally, a model goodness-of-fit was evaluated, and the Akaike's Information Criterion (AIC), Hurvich and Tsai's Criterion (AICC), and Schwarz's Bayesian Criterion (BIC) measures all confirmed that the most appropriate covariance structure for the models was an unconditional structure.

Finally, to examine the relationship between the narrative play experiences and children's narrative outcomes, we matched children's NIA-P scores to the narrative event type results from their respective play group. Because only a sample of play groups were analyzed, the analyses are based on a sub-sample of children matched to play group data. As with the previous analysis, scores were calculated as the sum of units multiplied by play duration as a proportion of forty-minute play intervention to produce a proportionally weighted total score. Theme was dummy coded with the Farm theme as the reference group. Pearson's correlation was run to check for collinearity among the NIA-P event-type score, NIA-P total score, and narrative play event-type score (see Appendix I). We used multilevel regression models to account for interdependency among observations and the nested nature of the data.

CHAPTER VI

RESULTS

Multilevel regression models were used to analyze the relationships between play condition, vocabulary learning, and narrative comprehension. Table 5 shows the descriptive statistics of participants by play group. The average pre-test score for the vocabulary assessment is slightly lower for the free play group than for guided and directed groups. However, an independent sample t-test analysis showed that the differences were not significant. Tests for normality were conducted and it was determined that raw data should be used for this analysis.

Table 5. *Descriptive Statistics of Children's Age, Attendance, and Assessment Performance by play group*

	Play Condition	N	Min.	Max.	*M*	SD
Age at Pre-test (months)	Directed Play	49	54	65	59.6	3.2
	Guided Play	47	54	66	60.1	3.3
	Free Play	49	54	66	60.1	3.4
Number of Days Attended Intervention	Directed Play	49	6	8	7.6	0.7
	Guided Play	47	4	8	7.5	0.9
	Free Play	49	4	8	7.3	1.1
Vocabulary Pre-test score	Directed Play	49	6	19	11.3	3.2
	Guided Play	47	6	17	11.0	2.7
	Free Play	49	5	17	10.7	3.3
Vocabulary Post-test score	Directed Play	49	8	26	16.6	4.1
	Guided Play	47	7	23	16.3	3.9
	Free Play	49	6	24	14.6	4.6
NIA-P Score	Directed Play	49	6	30	17.8	5.3
	Guided Play	47	7	31	16.4	5.8
	Free Play	49	2	29	15.5	5.6

Research Question 1

This analysis looked to understand the relationship between children's vocabulary knowledge at pretest and narrative skills at the end of the intervention. A multi-level model was used with three levels in the data: child, play group, and classroom. Age was the only covariate used as theme and attendance covariates were not applicable at the pretest stage. The following equation guides the analysis.

Narrative Comprehnsion$_{ijk}$ = γ_{000} + γ_{001}*Age$_k$ + γ_{002}*Vocabulary Pre-test$_k$ + U$_{00k}$ + r$_{ijk}$

Age was not a significant covariate (γ_{001}=-0.141, *SE*=0.130, *p*=0.282) but vocabulary knowledge at pre-test proved to be a significant predictor (γ_{002}=0.760, SE=0.142, p<0.001). The more story-specific words children knew before the intervention, the better they performed on the narrative task. For every word children knew prior to the intervention, they scored an additional 0.76 points on the NIA-P assessment, post intervention. The effect sizes for pre-test was 0.42, thus a 1 *SD* increase in pretest vocabulary scores was associated with a 0.42 *SD* increase in narrative comprehension.

Research Question 2

The second question examined whether the vocabulary learned during the reading and play intervention is predictive of narrative skills at the end of the intervention. Using a multi-level model, we tested whether vocabulary gains predicted narrative scores when controlling for pretest score, age, attendance, and book theme. The model accounted for three levels in the data: child, play group, and classroom.

Narrative Comprehnsion$_{ijk}$ = γ_{000} + γ_{001}*Age$_k$ + γ_{002}*Attendance$_k$ + γ_{003}* Vocabulary Pre-Test$_k$ + γ_{004}* Vocabulary Post-Test$_k$ + γ_{100}*Theme$_{ijk}$ + U$_{00k}$ + U$_{0jk}$ + r$_{ijk}$

Analysis showed that after accounting for the covariates, age (γ_{001}= -0.111, $SE = 0.110$, $p=$ 0.316), attendance (γ_{002}=-1.225, SE=0.393, p=0.002), vocabulary pre-test (γ_{003}=0.264, SE=0.140, p=0.062), and theme (γ_{100}=-1.751, SE=0.802, p=0.045, students who learned more book-related vocabulary words during the intervention, told better narratives at post-test (γ_{004}=0.717, SE=0.099, p<0.001). Also see Table 6. This result shows that every additional word known at post-test was associated with 0.71 additional points on the NIA-P, when controlling for age, attendance, theme, and pretest scores. The effect size was moderate (d=0.55) indicating that this 1 SD increase in vocabulary gains was associated with a 0.55 SD increase in narrative comprehension.

Table 6. *Unstandardized Parameter Estimates (Standard Errors) for Model for Gains in Vocabulary Measure Predicting NIA-P Score*

Parameters	Estimate (*SE*)
Fixed Effects	
Level 1, Child	
Intercept γ000	18.891 (6.920)**
Age γ001	-0.111 (0.110)
Attendance γ002	-1.225 (0.393)**
Vocabulary Pre-Test γ003	0.264 (0.140)
Vocabulary Post-Test γ004	0.717 (0.099)***
Level 3, Classroom	
Theme γ100	-1.751 (0.802)*

Notes. Standard errors adjusted for random effects associated interdependency among observations. Children (Level 1) are nested within play groups (Level2) within classrooms (Level 3). Models comparing random to fixed slope for theme revealed that the simpler model (fixed slope) was more parsimonious therefore, theme (Level3) was included as a fixed covariate. Positive estimates for Theme (γ0100) indicate that children in the Dragon theme had larger posttest scores compared to children in the Farm theme.
***p < .001. **p < .01. *p < .05

Research Question 3

The third question investigated whether children's narrative performance varied by play condition. The following multilevel model was used:

Narrative Comprehnsion$_{ijk}$ = γ_{000} + γ_{001}*Age$_k$ + γ_{002}*Attendance$_k$ + γ_{003}* Vocabulary Pre-Test$_k$ + γ_{010}*GP to FP$_{jk}$ + γ_{020}*DP to FP$_{jk}$ + γ_{100}*Theme$_{ijk}$ + U$_{00k}$ + U$_{0jk}$ + r$_{ijk}$

Once again, the model accounted for three nested levels in the data: child, play group, and classrooms. Covariates included age, attendance, and theme. Results in Table 7 reveal positive estimates at play group level (γ_{0010} and γ_{0020}) indicating that children in guided and directed play groups had larger NIA-P scores compared to the children in the free play condition. Positive estimates for theme (γ_{0100}) indicate that children in the dragon theme had larger posttest scores compared to children in the farm theme. Only the comparison between DP and FP revealed a significant result indicating that children in directed play groups told significantly more detailed stories than children in free play groups. On average children in directed play scored 2.2 points higher on the NIA-P than those in free play, when accounting for differences in age, attendance, and pre-test vocabulary knowledge. Cohen's *d* standardized mean difference was calculated to interpret effect size for the condition differences. A moderate effect size was found (*d*=.044), indicating that there was an educationally meaningful difference between the narratives produced by the two groups. No significant difference was found between GP and FP children's narratives. Thus, the most heavily adult scaffolded condition was the most effective for story retell.

Table 7. *Unstandardized Parameter Estimates (Standard Errors) for Model Predicting Children's Narrative Abilities by Play Condition*

Parameters	Estimate (*SE)*
Fixed Effects	
Level 1, Child	
Intercept, γ_{000}	21.471 (7.881)[**]
Age, γ_{001}	-0.122 (0.127)
Attendance, γ_{002}	-1.114 (0.451)[*]
Vocabulary Pre-Test, γ_{001}	0.788 (0.137)[***]
Level 2, Play Group	
Guided v. Free play γ_{010}	0.998 (0.964)
Directed v Free play γ_{020}	2.190 (0.963)[*]
Level 3, Classroom	
Theme, γ_{100}	1.785 (1.024)

Notes. Standard errors adjusted for random effects associated interdependency among observations. Children (Level 1) are nested within play groups (Level2) within classrooms (Level 3). Models comparing random to fixed slope for theme revealed that the simpler model (fixed slope) was more parsimonious therefore, theme (Level3) was included as a fixed covariate. For condition comparisons ($\gamma 0010$, $\gamma 0020$), free play is the reference group. Positive estimates indicate that children in adult supported play conditions (Guided and Directed) had larger narrative scores compared to the children in the Free Play condition. Positive estimates for Theme ($\gamma 0100$) indicate that children in the Dragon theme had larger posttest scores compared to children in the Farm theme.
[***]p < .001. [**]p < .01. [*]p < .05

Research Question 4

Results from question three showed that children in the adult supported play groups told more detailed narratives at the end of the intervention than children in unsupported play. However, these play conditions were embedded in a vocabulary focused intervention, and it may be that this language instruction provided the necessary support for retelling stories thus, rather than hypothesizing a direct causal relationship between play condition and story retell, a mediation model can be used to identify an underlying mechanism. It may be that vocabulary, that supports the relationship between play and narrative retell. A mediation model can be depicted by two pathways as shown in the equations below:

Path a: Vocabulary Gains$_{ijk}$ = γ_{000} + γ_{001}*Age$_k$ + γ_{002}*Attendance$_k$ + γ_{003}*Vocabulary Pre-Test$_k$ + γ_{010}*GP to FP$_{jk}$ + γ_{020}*DP to FP$_{jk}$ + γ_{100}*Theme$_{ijk}$ + U$_{00k}$ + U$_{0jk}$ + r$_{ijk}$

Path c': Narrative Comprehnsion$_{ijk}$ = γ_{000} + γ_{001}*Age$_k$ + γ_{002}*Attendance$_k$ + γ_{003}*Vocabulary Pre-Test$_k$ + γ_{004}* Vocabulary Gains$_k$ + γ_{010}*GP to FP$_{jk}$ + γ_{020}*DP to FP$_{jk}$ + γ_{100}*Theme$_{ijk}$ + U$_{00k}$ + U$_{0jk}$ + r$_{ijkc}$

For the stacked method used in this analysis, these two paths are combined into a single multivariate model as represented by the equation below:

Narr_Vocab_Scores$_{ijk}$ = γ_{001}*Age$_k$ + γ_{002}*Attendance$_k$ + γ_{003}*Vocabulary Pre-Test$_k$ + DVocab$_{ijk}$*γ_{000} + γ_{010}* PlayGPforVocab$_{jk}$ + γ_{020}* PlayDPforVocab$_{jk}$ + DNarr$_{ijk}$*γ_{000} + γ_{003}* VocabForNarr$_k$ + γ_{010}* PlayGPforNarr$_{jk}$ + γ_{020}* PlayDPforNarr$_{jk}$ + γ_{100}*Theme$_{ijk}$ + U$_{00k}$ + U$_{0jk}$ + r$_{ijkc}$

The results from question 3 revealed that play condition was a significant predictor of children's NIA-P score, for comparison between directed and free play. However, once the vocabulary mediation path is included in the model, the group comparison between directed and free play (γ_{030}) is no longer significant (See path c in Table 8). Furthermore, the mediator, vocabulary gains, indicated in path b of Table 8, are now significant ($\gamma 004$=2.278, *SE*=0.421, *p*<0.001). These results indicate that vocabulary gains are indeed mediating the relationship between play condition and narrative outcome.

Table 8. *Unstandardized Parameter Estimates (Standard Errors) for Multivariate Mediation Model Predicting Children's Narrative Abilities with Vocabulary as Mediator*

Parameters	Estimate (*SE*)
Covariates	
Theme, γ_{100}	-0.072 (0.184)
Age, γ_{001}	-0.327 (0.030)
Attendance, γ_{002}	0.052 (0.091)
Vocabulary Pretest, γ_{002}	0.326 (0.015)
Path a	
DP v. FP for Vocabulary gains, γ_{010}	0.415 (0.202)
GP v. FP for Vocabulary Gains, γ_{020}	0.387 (0.203)
Path b	
Vocabulary for Recall, γ_{004}	2.278 (0.421)***
Path c	
DP v FP play for Recall, γ_{030}	1.358 (1.013)
GP v. FP play for Recall, γ_{040}	0.169 (1.021)

Notes. Standard errors adjusted for random effects associated interdependency among observations. Children (Level 1) are nested within play groups (Level2) within classrooms (Level 3). Models comparing random to fixed slope for theme revealed that the simpler model (fixed slope) was more parsimonious therefore, theme (Level3) was included as a fixed covariate. For condition comparisons ($\gamma0010$, $\gamma0020$, $\gamma0030$, $\gamma0040$), free play is the reference group. Positive estimates indicate that children in adult supported play conditions (Guided and Directed) had larger narrative scores compared to the children in the Free Play condition. Positive estimates for Theme ($\gamma0100$) indicate that children in the Dragon theme had larger posttest scores compared to children in the Farm theme. ***p < .001. **p < .01. *p < .05.

The final step was to determine whether the reduction in the effect of the play condition, after including vocabulary gains in the model, was significant and therefore determine whether the mediation effect is statistically significant or not. The Monte Carlo Method for Assessing Mediation (MCMAM) was used as it performs better than the widely used Sobel test (Preacher & Selig 2012). Confidence intervals for the MCMAM were calculated at 95% confidence interval (LL= 0.045, UL= 1.165) exclude zero thus allowing us to reject the null hypothesis and conclude that the mediation is significant.

Research Question 5

The final research question compared the structure and content of the narrative play behaviors during play across the adult supported conditions. To test the hypotheses laid out, we compared the structure of the narratives produced in each play condition by examining the content and organization of adult's and children's narrative contributions. Additionally, we compared adult and child narrative contributions across the three play conditions, hypothesizing that adults produce significantly more talk in DP play sessions than in GP sessions. Next, we predicted that children would contribute non-verbally in DP sessions but verbally in GP sessions. Finally, we examined the change in participation over the 4 play sessions, predicting an increase from children and a decrease from adults.

These analyses present patterns of narrative language use by adults and children play sessions through descriptive statistics. Because students were randomly assigned to one of two themes, it was necessary to determine whether the farm and dragon play sessions were comparable. An independent samples *t*-test on the three primary outcome variables, Adult verbal, child verbal, and child non-verbal, for the dragon and farm themes indicated that there was no significant difference between the two themes or for the adult verbal or child non-verbal outcome variables; however there was a significant difference for child non-verbal units (See Table 9). Because of this difference, we included theme as a covariate in all analyses where appropriate.

Table 9. *Descriptive Statistics and Independent Samples T-Test Results for Dependent Variables*

Theme	N	*M*	*SD*	Mean diff.	*t*	*p*	*d*
Adult Total Verbal							
Dragon	47	24.31	24.95	7.68	1.73	0.088	0.36
Farm	46	16.63	17.35				
Child Total Verbal							
Dragon	47	16.83	6.58	7.21	6.74	0.000	1.39
Farm	46	9.62	3.19				
Child Non-Verbal							
Dragon	47	8.74	7.67	-1.96	-0.92	0.358	0.19
Farm	46	10.70	12.22				

Notes: Equal variances not assumed. Cohen's d standardized mean-difference effect size.

Results here are reported in three parts: (1) Narrative construction and organization, which examines compositions and sequencing of the intervention stories during the play sessions; (2) adult and child participation, which reports on the averages and proportions of adult and child verbal and non-verbal contributions to the narrative enactment, as well as adult and child participation over the four days of the intervention; and (3) the Relationship between narrative play events and children's NIA-P outcomes.

Narrative Construction and Sequencing

Figure 3 displays the sequencing of the narrative units over play and shows all verbal contributions (adult and child combined), by narrative event type over the duration of the play session. Directed play groups followed a classic narrative sequence. As seen in the top figure, DP sessions started with a brief but thorough introduction that explicitly set the scene and introduced the characters. These quickly dropped off after minute two, indicating that most characters and locations were introduced at the start of play. This was quickly followed by rising actions and climax features. Figure 2 shows that the bulk of rising actions occurred in the first three to five

minutes and these were soon combined with the appearance of climax events from minute five. Rising actions and climaxes frequently appeared together, as the DP script performed by the adult, regularly connected the two ideas e.g. "Knight, put your armor on so that you can fight the dragon" (put on armor = rising action, fight the dragon = climax event). Narrative climax units were most prevalent around the sixth minute, and then tapered off towards the end of the session. As expected in a typical narrative arrangement, the final few minutes of play were focused primarily on resolution enactments. Resolutions started to appear around the eighth minute and at the same time, the number of rising actions and climax features decreased. The guided play sessions were notably different from directed play in that there was no clear progression of a narrative (see the Guided Play profile in Figure 3). Orientations were most common in the first minute of play, but continued to appear as the characters and locations are introduced to the play scenarios. Similar to directed play, rising actions and climax features appeared together, but unlike play, these events were prominent from start to finish. There was a notable lack of resolutions towards the end of the guided play sessions. Similar to guided play, the free play sessions did not follow any narrative structure (see the Free Play profile in Figure 3). Orientations were most common in first two minutes of play as children familiarized themselves with toys and negotiated toy allocations. The few story items that were enacted were mostly rising actions occasionally connected to related climax events, but climax features were not common, and resolutions almost never appeared.

Directed Play

	Min 1	Min 2	Min 3	Min 4	Min 5	Min 6	Min 7	Min 8	Min 9	Min 10	Min 11+
Non-Verbal	1.07	2.66	2.94	3.30	3.00	2.42	2.59	2.94	1.74	1.22	1.49
Orientations.	6.78	1.79	0.47	0.26	0.33	0.29	0.26	0.09	0.18	0.25	0.05
Rising Actions.	0.55	2.88	6.31	7.09	4.45	2.66	1.99	1.61	1.10	0.60	0.72
Climax.	-	0.54	0.32	0.15	1.62	3.50	2.70	2.33	1.41	0.75	0.82
Resolutions.	-	0.04	-	-	-	0.74	1.77	3.43	3.10	3.06	1.93

Guided Play

	Min 1	Min 2	Min 3	Min 4	Min 5	Min 6	Min 7	Min 8	Min 9	Min 10	Min 11+
Non-Verbal	0.25	0.38	0.47	0.46	0.74	0.79	0.51	0.77	0.47	0.34	0.28
Orientations.	3.90	1.15	0.77	0.58	0.92	0.60	0.52	0.27	0.49	0.19	0.07
Rising Actions.	0.64	1.30	1.68	1.25	1.35	1.57	1.36	1.63	1.20	1.00	1.10
Climax.	0.19	0.48	1.09	0.76	1.01	1.61	1.09	1.02	0.36	0.52	0.63
Resolutions.	0.03	0.22	0.15	0.27	0.39	0.21	0.23	0.72	0.42	0.24	0.40

Free Play

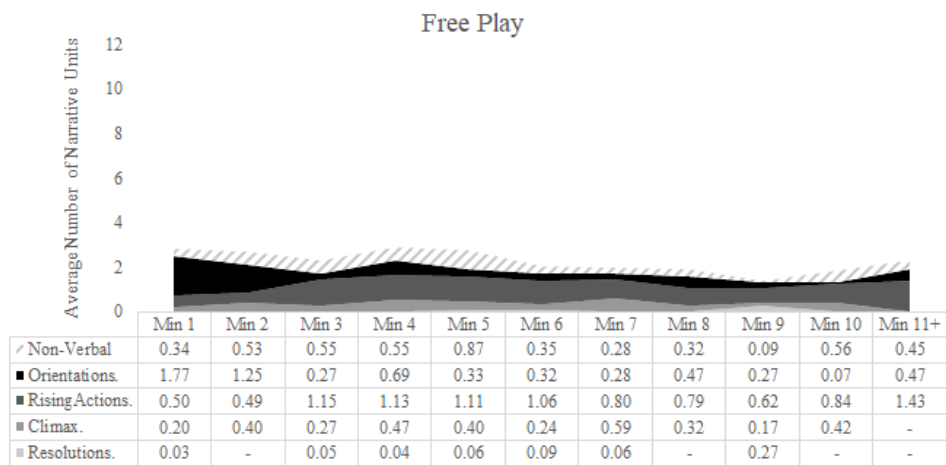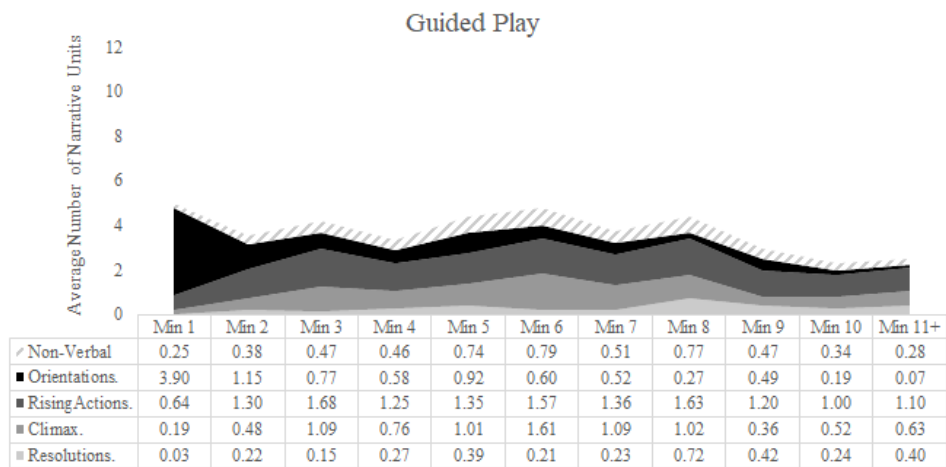|	Min 1	Min 2	Min 3	Min 4	Min 5	Min 6	Min 7	Min 8	Min 9	Min 10	Min 11+
Non-Verbal	0.34	0.53	0.55	0.55	0.87	0.35	0.28	0.32	0.09	0.56	0.45
Orientations.	1.77	1.25	0.27	0.69	0.33	0.32	0.28	0.47	0.27	0.07	0.47
Rising Actions.	0.50	0.49	1.15	1.13	1.11	1.06	0.80	0.79	0.62	0.84	1.43
Climax.	0.20	0.40	0.27	0.47	0.40	0.24	0.59	0.32	0.17	0.42	-
Resolutions.	0.03	-	0.05	0.04	0.06	0.09	0.06	-	0.27	-	-

Figure 3. Average Number Narrative Event Types Per Minute by Play Condition

Table 10 shows the average verbal contributions, by narrative type, that adults and children made during play sessions. Overall, rising actions were the most common narrative comment for all three conditions. Rising actions are the story events that typically lead to a climax or goal. This was highest for directed play, where an average of 46% ($M=28.6$) of the narrative play was dedicated to rising actions; free play ($M=5.1$, 44%) and guided play ($M=11.6$, 38%) were very similar proportionally. Resolution units were the least common for all three conditions. However, the average and ratio for resolutions in directed play ($M=10.7$, 17%) were considerably higher than GP ($M=2.6$, 9%) or FP ($M=0.3$, 3%).

In the FP condition, story-related play focused primarily on rising actions ($M=5.1$, 44%) and orientations ($M=4.1$, 36%). Climax types were half as common ($M=2.0$, 18%); while resolution units were rare ($M=0.3$, 3%) scenarios. Similarly, for GP, the most frequent narrative type was rising actions ($M=11.6$, 38%); while orientation ($M=8.6$, 29%) and climax units ($M=7.2$, 24%) were close followers. By comparison to other enactment types in guided play, resolutions were notably less frequent ($M=2.6$, 9%). For DP, rising actions covered almost half of the narrative enactment ($M=28.6$, 46%). The remaining three events types had similar averages (climax: $M=12.7$, 20%; resolutions: $M=10.7$, 17%; orientations: $M=10.4$, 17%). It should be noted again that orientations were only coded once per item per subject at the first instance of its mention, when in reality, characters were introduced and named several times by both adults and children during play sessions.

Table 10. *Average Verbal Narrative Units and Percentage of Total Contribution by Play*

Condition

	Directed Play		Guided Play		Free Play	
	Mean(Min, Max)	%	Mean (Min, Max)	%	Mean(Min, Max)	%
By Condition						
Orientations	10.4 (7.2, 14.7)	17%	8.6 (5.0, 12.4)	29%	4.1 (2.1, 6.2)	36%
Rising Act	28.6(18.3, 44.9)	46%	11.6 (3.8, 34.9)	38%	5.1 (0, 18.6)	44%
Climax	12.7 (6.0, 24.2)	20%	7.2 (0, 25.7)	24%	2.0 (0, 5.9)	18%
Resolution	10.7 (3.8, 21.9)	17%	2.6 (0, 13.3)	9%	0.3 (0, 2.9)	3%

The following multilevel model was used to ascertain if the differences in the number of event type contributions across conditions were significant. This model was used for each event type outcome, orientations, rising actions, climaxes, and resolutions:

$$[\text{Narrative Event Type}]n_{ijk} = \gamma_{000} + \gamma_{010}*\text{GP to DP}_{jk} + \gamma_{020}*\text{FP to DP}_{jk} + \gamma_{100}*\text{Theme}_{ijk} + U_{00k} + U_{0jk} + r_{ijk}$$

The model accounted for three levels in the data: play sessions, play groups, and classrooms. For this analysis directed play was coded as the reference group. Theme was included as a covariate to control for differences between dragon and farm results. Results in Table 11 reveal negative estimates at play group level (γ_{0010} and γ_{0020}) for all four event types and confirm that adults and children in directed play sessions contributed significantly more narrative events to the play sessions compared to those in the guided and free play sessions. Effect sizes ranged from 0.92 to 4.93, indicating that there were considerable differences between the narrative play scenarios produced by the groups.

Table 11. *Unstandardized Parameter Estimates (Standard Errors) and Cohen's d Effect Sizes for Models Predicting Narrative Event Types by Play Condition*

	Orientations	Rising Actions	Climaxes	Resolutions
Fixed Parameters				
Level 1, Play Session				
Intercept, γ_{000}	11.232 (0.439)***	24.729 (0.752)***	9.523 (0.826)***	6.898 (0.725)***
Level 2, Play Group				
GP to DP, γ_{010}	-2.138 (0.529)***	-16.051 (0.910)***	-6.021 (0.980)***	-7.828 (0.877)***
FP to DP, γ_{020}	-6.534 (0.529)***	-22.48 (0.910)***	-9.72 (0.980)***	-7.998 (0.877)***
Level 3, Classroom				
Theme, γ_{100}	-1.147 (0.429)*	4.94 (0.741)***	4.903 (0.828)***	2.892 (0.711)***
Cohen's *d* effect size				
GP to DP	4.39	3.2	0.94	1.8
FP to DP	0.92	4.9	3.03	2.69

Notes: Standard errors adjusted for random effects associated interdependency among observations. Play sessions (Level 1) are repeated within playgroups (Level2) within classrooms (Level 3). For condition comparisons (γ0010, γ0020), direct play is the reference group. Positive estimates indicate that Guided and Free Play conditions had larger narrative event type scores compared to the Directed Play condition. Positive estimates for Theme (γ0100) indicate that the Dragon theme had larger scores compared to the Farm theme. Cohen's d standardized mean-difference effect size.
***p < .001. **p < .01. *p < .05.

Adult and Child Participation

Table 12 and the accompanying figure (Figure 4), show the descriptive information for adult verbal, child verbal, and child non-verbal participation by play group. There was a considerable difference in total adult contributions between directed (*M*=49.06, *SD*=12.12) and guided play (*M*=15.16, *SD*=6.80), and this difference was significant (γ010=-33.539, SE=2.133, *p*<0.001); the magnitude of the difference as measured by Cohen's d was large (*d*=3.5) indicating a meaningful difference in adult participation between the groups. By contrast, the differences in child verbal contributions to the narrative play were less variable. Comparison between children's verbal contributions in directed versus guided play showed the difference was not significant (γ010= 1.389, SE=1.439, *p*=.458). Children's average verbal contributions in free play sessions was only slightly lower than the DP average, but again this difference was not significant (γ020=-

2.459, SE=1.439, p=.261). In terms of children's non-verbal behaviors, there was a significant

difference between directed and guided play sessions ($\gamma 010$= -20.354, SE=1.466, p<0.001); as well

as between directed and free play sessions ($\gamma 020$=-20.806, SE=1.466, p<0.001), but these

differences were small (DP vs GP: d=3.4; DP vs FP: d=3.8).

Table 12. *Descriptive Statistics for Adult and Child Verbal and Non-Verbal Narrative Units Per Play Session by Condition*

	Min	Max	Mean	SD	% of total contributions
Direct Play (*n*=29)					
Adult Total	31.8	80.6	49.1	12.1	57.4%
Child Total	6.3	31.1	13.4	5.2	15.6%
Child Non-Verbal	10.3	35.0	23.1	7.4	27.0%
Guided Play (*n*=32)					
Adult Total	5.9	31.3	15.2	6.8	43.8%
Child Total	3.8	39.1	14.9	7.2	43.0%
Child Non-Verbal	0.0	11.8	4.6	2.7	13.2%
Free Play (*n*=32)					
Adult Total	-	-	-	-	-
Child Total	2.9	26.5	11.6	6.0	81.1%
Child Non-Verbal	0.0	7.0	2.7	2.1	18.9%
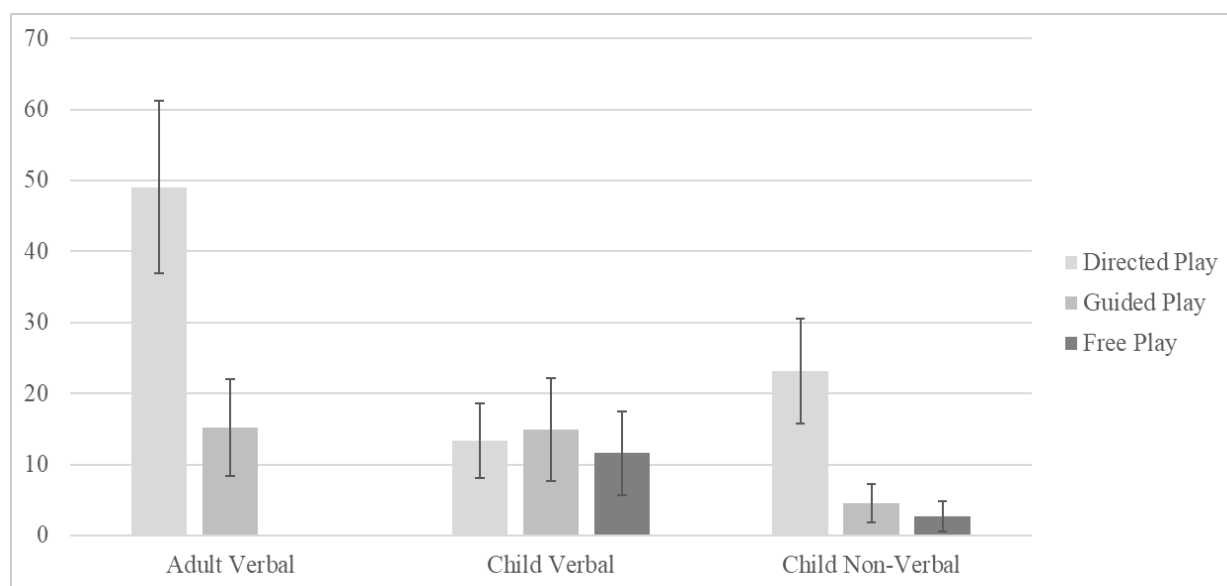
Figure 4. Average Verbal and Non-Verbal Narrative Units Per Play Session by Condition (with standard deviation error bars)

Although the average number of narrative units was significantly higher in directed play than the other two condition, it should be noted that a large proportion of these were made by the adult (57.4%); adult verbal contributions were almost four times that of children (see Figure 5). Additionally, in directed play, the proportion of child verbal contributions (15.6%) was low when compared to the proportions in GP (43.0%) and FP (81.1%). However, the percentage of non-verbal contributions were high; children made almost twice as many non-verbal contributions (27%) as verbal (15.6%) in the directed play scenarios. Furthermore, when children's verbal and non-verbal contributions in directed play are combined, they make up 42.3% of the narrative construction. By contrast, in the guided play groups, the narrative events were equally constructed by adult (43.8%) and child verbal utterances (43.0%). Moreover, child verbal and non-verbal contributions combined, provided more than half (56.2%) the narrative composition.
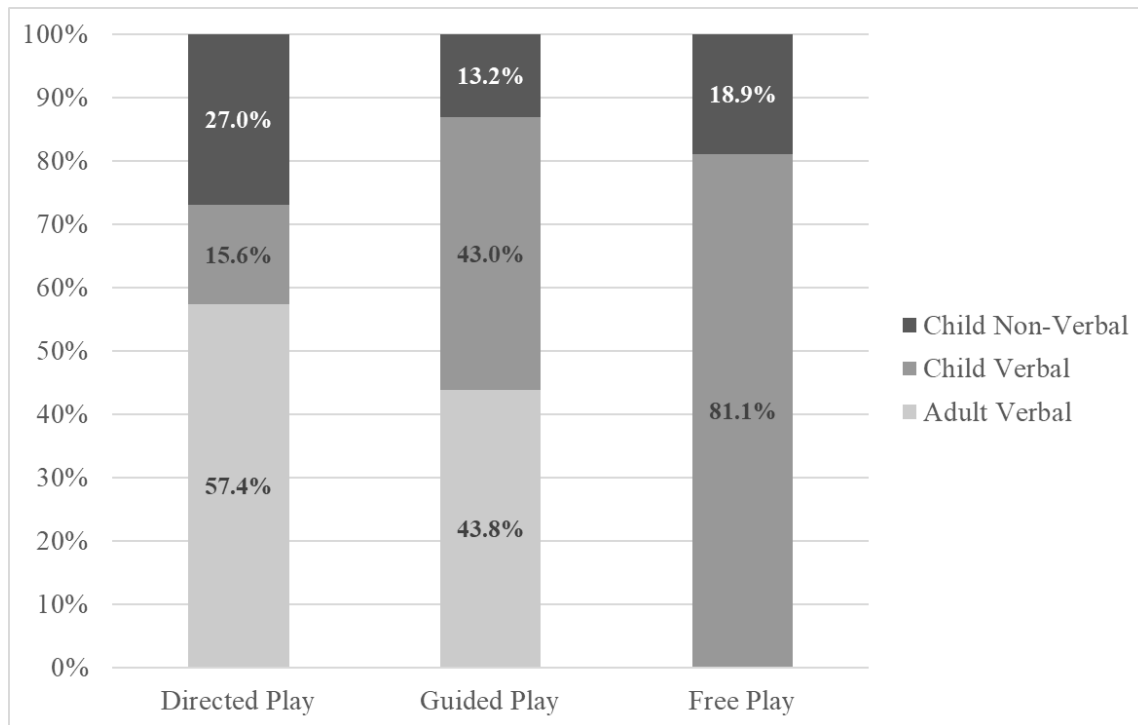
Figure 5. Proportion of Adult Verbal, Child Verbal, and Child Non-Verbal Contributions by Play Condition

The final prediction for adult and child participation was that children's overall contributions (verbal and non-verbal) would increase over the four days as they become more familiar with the storylines and play behaviors; while adults would decrease. Table 13 shows that there was very little variation for the three variables (adult verbal, child verbal, child non-verbal) in the three conditions (Directed Play, Guided Play, Free Play). Contrary to our prediction, child participation, verbally and non-verbally, did not increase over the intervention period; similarly, adult participation did not show a declining trend over the four days either.

Table 13. *Descriptive Statistics for Adult and Child Verbal and Non-Verbal Contributions*

from Day 1 to 4 by Condition

	Day 1	Day 2	Day 3	Day 4
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Directed Play				
Adult Verbal	47.84 (9.41)	49.09 (11.32)	45.88 (10.62)	53.71 (17.05)
Child Verbal	18.10 (7.20)	12.40 (5.12)	10.85 (3.33)	13.21 (2.99)
Child Non-Verbal	23.04 (9.52)	22.00 (9.30)	23.85 (5.25)	23.60 (6.71)
Guided Play				
Adult Verbal	11.32 (4.38)	17.65 (7.42)	12.15 (5.63)	19.52 (6.54)
Child Verbal	16.11 (9.96)	15.17 (4.04)	14.12 (8.46)	14.10 (6.40)
Child Non-Verbal	3.40 (1.86)	5.19 (2.29)	3.24 (2.15)	6.45 (3.18)
Free play				
Child Verbal	13.42 (8.38)	12.65 (5.97)	11.58 (5.08)	8.65 (3.14)
Child Non-Verbal	2.63 (2.02)	2.69 (1.98)	3.46 (2.49)	2.02 (1.92)

Adult and Child Verbal Contributions by Event Type

When comparing adult and child verbal contributions of different narrative features, one can see that in guided play, adult and child contributions closely mirrored one another (See Table 14). Both adults (*M*=5.2, 17%) and children (*M*=6.4, 21%) produced more rising actions than any other event type; and the average number of orientation and climax units were also similarly matched for adult (Orient: *M*=4.4, 15%; Climax: *M*=4.0, 13%) and child (Orient: *M*=4.2, 14%; Climax: *M*=3.3, 11%). Resolutions were rare for both children (*M*=1.0, 3%) and adults (*M*=1.6, 5%). In contrast, directed play was dominated by adult narrative talk (78% of all verbal contributions), and half of this adult talk was dedicated to rising actions (*M*=22.6, 36%). Adults in directed play spent considerable time on climax (*M*=10.9, 17%) and resolution (*M*=9.4, 15%) units; however children in directed play did not mirror this, and their climax (*M*=1.8, 3%) and

resolution (*M*=1.2, 2%) units totaled to only 5%, of all talk. Free play results were presented in the Narrative Construction portion of this section.

Table 14. *Average Verbal Narrative Units by Play Condition and Subject*

	Directed Play			Guided Play			Free Play		
	Mean	(Min, Max)	%	Mean	(Min, Max)	%	Mean	(Min, Max)	%
Adult									
Orientations	6.2	(4.5, 8)	10%	4.4	(2.5, 6.5)	15%			
Rising Act	22.6	(15.4, 29.9)	36%	5.2	(0.9, 11.2)	17%			
Climax	10.9	(4.8, 22.1)	17%	4.0	(0, 12.9)	13%			
Resolution	9.4	(3.6, 20.8)	15%	1.6	(0, 7.6)	5%			
Child									
Orientations	4.3	(1.8, 7.4)	7%	4.2	(1.8, 6.7)	14%	4.1	(2.1, 6.2)	36%
Rising Act	6.1	(1.3, 16.1)	10%	6.4	(0, 28.3)	21%	5.1	(0, 18.6)	44%
Climax	1.8	(0, 10.4)	3%	3.3	(0, 12.9)	11%	2.0	(0, 5.9)	18%
Resolution	1.2	(0, 7.3)	2%	1.0	(0, 6.9)	3%	0.3	(0, 2.9)	3%

The Relationship Between Narrative Play Events and NIA-P Outcomes.

The results from the previous questions revealed two important relationships: First, children in the directed play told significantly more detailed stories than those in free play, and secondly, the number of narrative items covered in DP was significantly greater than GP and FP. It stands to reason then, that the amount of story exposure in directed play was predictive of children's narrative production. To examine the relationship between the narrative play events and children's narrative outcomes, we matched children's NIA-P scores to the verbal and non-verbal narrative results from their respective play group. Because only a sample of play sessions were analyzed, the following results are based on the sub-sample of children that matched to coded play sessions. Descriptive statistics of the matched and unmatched samples can be seen in Table 15.

The averages and standard deviations for independent, dependent, and control variables are similar; however, an independent sample t-test analysis showed that the difference in age between the two samples was significant. The average age difference between the matched and unmatched samples was 1.1 month. While the difference proved to be significant, in practical terms, the difference is small; however, where appropriate age was included as a covariate to account for the difference.

All analyses included age, attendance, vocabulary pre-test, and theme as covariates, and accounted for the nesting of children in playgroups and classroom. Event-type scores from the play sessions accounted for differing play lengths using a weighted score. For this question we analyzed subject verbal and non-verbal contributions (adult verbal, child verbal, and child non-verbal), as well as the event-type contributions (play orientations, rising actions, climaxes, and resolutions) to understand the relationship between play behaviors and children's narrative productions.

Table 15. *Descriptive Statistics and Independent Samples T-Test Results for Matched Sample and Unmatched Sample*

Variable	N	*M*	*SD*	Mean diff.	*t*	*p*	*d*
Gender [*]							
Matched sample	75	0.52	0.50	-0.123	-1.501	0.136	0.25
Unmatched sample	70	0.64	0.48				
Age [†]							
Matched sample	75	60.48	3.27	1.109	2.052	0.042	0.34
Unmatched sample	70	59.37	3.23				
Attendance [†]							
Matched sample	75	7.52	0.79	0.149	0.964	0.337	0.16
Unmatched sample	70	7.37	1.05				
Theme [†]							
Matched sample	75	0.45	0.50	-0.018	-0.217	0.829	-0.04
Unmatched sample	70	0.47	0.50				
Vocabulary Pre-Test [†]							
Matched sample	75	11.09	3.30	0.208	0.405	0.686	0.07
Unmatched sample	70	10.89	2.85				
Vocabulary Post-Test [†]							
Matched sample	75	16.09	4.49	0.550	0.771	0.442	0.13
Unmatched sample	70	15.54	4.08				
NIA-P Score [†]							
Matched sample	75	16.87	5.71	0.667	0.718	0.474	0.12
Unmatched sample	70	16.20	5.45				

Notes: Cohen's d standardized mean-difference effect size.
[*] Equal variances not assumed
[†] Equal variances assumed

Adult and child play contributions and children's NIA-P production. The first analysis examined the relationship between adult and child contributions in play and children's NIA-P production. The following model was used to examine the relative verbal and non-verbal contributions to NIA-P scores:

NIA-P Total Score$_{ijk}$ = γ_{000} + γ_{001}*Age$_k$ + γ_{002}*Attendance$_k$ + γ_{003}*Vocabulary Pre-Test$_k$ + γ_{010}*Adult Verbal + γ_{020}*Child Verbal + γ_{030}*Child Non-Verbal + γ_{100}*Theme$_{ijk}$ + U$_{00k}$ + U$_{0jk}$ + r$_{ijk}$

The results in Table 16 show that the neither adult ($\gamma010$= 0.02, SE=0.01, p=0.168) nor child verbal ($\gamma020$= -0.05, *SE*=0.03, *p*=0.145) contributions were significant predictors of children's narrative productions. Additionally, children's non-verbal contributions ($\gamma030$=0, SE=0.03, *p*=0.891) were also not significant in predicting children's narrative outcomes.

Table 16. *Unstandardized Parameter Estimates (Standard Errors) for Adult Verbal, Child Verbal, and Child Non-Verbal Play Behaviors Predicting Children's NIA-P Total Score*

Parameters	Estimate (*SE*)
Fixed Effects	
Level 1, Child	
Intercept, γ_{000}	36.47 (11.81)[**]
Age, $\gamma001$	-0.27 (0.18)
Attendance, γ_{002}	-1.45 (0.72)[*]
Vocabulary PreTest, γ_{003}	0.91 (0.18)[***]
Level 2, Play Group	
Adult Verbal, γ_{010}	0.02 (0.01)
Child Verbal, γ_{020}	-0.05 (0.03)
Child Non-Verbal, γ_{030}	0 (0.03)
Level 3, Classroom	
Theme, $\gamma100$	-3.05 (1.44)[*]

Notes. Standard errors adjusted for random effects associated interdependency among observations. Children (Level 1) are nested within play groups (Level 2) within classrooms (Level 3). Models comparing random to fixed slope for theme revealed that the simpler model (fixed slope) was more parsimonious therefore, theme (Level3) was included as a fixed covariate. Positive estimates for Theme ($\gamma0100$) indicate that children in the Dragon theme had larger posttest scores compared to children in the Farm theme.
****p < .001. **p < .01. *p < .05.*

Narrative event-type contributions and NIA-P total score. The second analysis looked at the relationship between play event-types and children's NIA-P production. The following model was used to examine the relative contributions of the different narrative play events:

NIA-P Total Score$_{ijk}$ = γ_{000} + γ_{001}*Age$_k$ + γ_{002}*Attendance$_k$ + γ_{003}*Vocabulary Pre-Test$_k$ + γ_{010}*Play Orientations + γ_{020}*Play Rising Actions + γ_{030}*Play Climaxes + γ_{040}*Play Resolutions + γ_{100}*Theme$_{ijk}$ + U_{00k} + U_{0jk} + r_{ijk}

The results in Table 17 show that none of the narrative event type contributions in the play sessions predicted children's overall narrative productions.

Table 17. *Unstandardized Parameter Estimates (Standard Errors) for Model Predicting Children's NIA-P Total Score*

Parameters	Estimate (*SE*)
Fixed Effects	
Level 1, Child	
Intercept, γ_{000}	29.95 (13.27)
Age, γ_{001}	-0.23 (0.18)
Attendance, γ_{002}	-1.17 (0.74)
Vocabulary Pre-Test, γ_{003}	0.89 (0.18)***
Level 2, Play Group	
Play Orientations, γ_{010}	0.02 (0.07)
Play Rising Actions, γ_{020}	-0.03 (0.04)
Play Climaxes, γ_{030}	0.01 (0.06)
Play Resolutions, γ_{040}	0.10 (0.06)
Level 3, Classroom	
Theme, γ_{100}	-1.69 (1.65)

Notes. Standard errors adjusted for random effects associated interdependency among observations. Children (Level 1) are nested within play groups (Level 2) within classrooms (Level 3). Models comparing random to fixed slope for theme revealed that the simpler model (fixed slope) was more parsimonious therefore, theme (Level3) was included as a fixed covariate. Positive estimates for Theme (γ0100) indicate that children in the Dragon theme had larger posttest scores compared to children in the Farm theme.
***p < .001. **p < .01. *p < .05.

Narrative event-type contributions and NIA-P event-type scores. Finally, we analyzed the associations between each event-type predictor from the play sessions, and the event-type score from the NIA-P, to evaluate whether event-type experiences in the play sessions predicted the

presence of the same event types in children's narrative production. Four models were run for each event type and its corresponding NIA-P subscale according to the following formula:

NIA-P [Narrative Event-Type]$_{ijk}$ = γ_{000} + γ_{001}*Age$_k$ + γ_{002}*Attendance$_k$ + γ_{003}*Vocabulary Pre-Test$_k$ + γ_{010}*Play [Narrative Event Type] + γ_{100}*Theme$_{ijk}$ + U_{00k} + U_{0jk} + r_{ijk}

Table 18 shows the parameter estimates and standard errors for the models predicting Children's NIA-P Event Type Scores and NIA-P Total Scores from the corresponding play even-type. The relationship between the occurrence of narrative event-types during play and children's use of these event-types in the NIA-P assessment were not significant.

Table 18. *Unstandardized Parameter Estimates (Standard Errors) for Models Predicting Children's NIA-P Event Type Scores*

Parameters	Parameter Estimates (SE)
Independent Variable:	NIA-P Orientations
Level 1, Child	
Intercept, γ_{000}	30.10 (11.67)[*]
Age, γ_{001}	-0.21 (0.18)
Attendance, γ_{002}	-1.42 (0.74)
Vocabulary Pre-Test, γ_{003}	0.86 (0.18)[***]
Level 2, Play Group	
Play Orientations, γ_{010}	0.06 (0.04)
Level 3, Classroom	
Theme, γ_{0100}	-2.67 (1.19)[*]
Independent Variable:	NIA-P Rising Actions
Level 1, Child	
Intercept, γ_{000}	30.68 (11.63)[*]
Age, γ_{001}	-0.22 (0.18)
Attendance, γ_{002}	-1.37 (0.74)
Vocabulary Pre-Test, γ_{003}	0.85 (0.18)[***]
Level 2, Play Group	
Play Rising Actions, γ_{010}	0.02 (0.01)

Level 3, Classroom	
Theme, γ_{0100}	-2.11 (1.20)

Independent Variable:	NIA-P Climaxes
Level 1, Child	
Intercept, γ_{000}	31.7 (11.57)[**]
Age, γ_{001}	-0.23 (0.18)
Attendance, γ_{002}	-1.43 (0.74)
Vocabulary Pre-Test, γ_{003}	0.86 (0.18)[***]
Level 2, Play Group	
Play Climaxes, γ_{010}	0.04 (0.03)
Level 3, Classroom	
Theme, γ_{0100}	-1.60 (1.36)

Independent Variable:	NIA-P Resolutions
Level 1, Child	
Intercept, γ_{000}	29.96 (11.49)[*]
Age, γ_{001}	-0.22 (0.18)
Attendance, γ_{002}	-1.26 (0.72)
Vocabulary Pre-Test, γ_{003}	0.87 (0.18)[***]
Level 2, Play Group	
Play Resolutions, γ_{010}	0.06 (0.03)
Level 3, Classroom	
Theme, γ_{0100}	-1.76 (1.21)

Notes. Standard errors adjusted for random effects associated interdependency among observations. Children (Level 1) are nested within play groups (Level 2) within classrooms (Level 3). Models comparing random to fixed slope for theme revealed that the simpler model (fixed slope) was more parsimonious therefore, theme (Level3) was included as a fixed covariate. Positive estimates for Theme (γ0100) indicate that children in the Dragon theme had larger posttest scores compared to children in the Farm theme.
***p < .001. **p < .01. *p < .05.

CHAPTER V

DISCUSSION

Several interventions have shown adult supported play to be beneficial for narrative learning, however the key instructional practices are largely unknown. The goal of this dissertation was to identify and examine effective and meaningful instructional strategies which support narrative development in early childhood classrooms. Specifically, this research focused on how book reading, play, and story-related vocabulary instruction can advance preschooler's narrative skills. While many studies have shown that adult guided play boosts narrative growth (Pellegrini & Galda 1982; Dansky 1980b; Saltz & Johnson 1974; Saltz et al. 1977; Tessler & Nelson 1994; Harris & Schroeder 2012; Hakkarainen et al. 2013; Glenberg et al. 2004; Biazak et al. 2010), the core play-support practices have not been clearly identified and therefore remain a challenge for teachers to implement.. This research contributes to the field in several ways. First, it reveals the importance of vocabulary learning for narrative comprehension and production. Techniques such as open questions, positive confirmations, and encouragements have already been shown to be effective in helping children to tell good stories. The current findings point to the importance of vocabulary instruction as an additional tool to bolster narrative competence. Second, this is one of the first studies to examine how different adult guided roles support narrative development. There is compelling evidence that adult guided play boosts narrative learning (Dansky 1980b; Pellegrini & Galda 1982; Baumer et al. 2005), but how much and what type of support adults should provide during play has been less well-defined. This study provides greater clarity on the role adults need to play in order to bolster learning during play. Finally, an in-depth examination of adult and child

participation in the construction and sequencing of narrative play reveals previously unidentified play-support and participation strategies that can guide educators in their efforts to foster preschooler's narrative skills.

The Relationship Between Vocabulary and Narrative Competency

The first objective of this study was to examine the role of vocabulary learning in supporting narrative comprehension, hypothesizing that word knowledge is crucial to understanding narratives. As predicted, children's existing vocabulary before the intervention was significantly predictive of their post-intervention narrative results. This result aligns with the reading comprehension literature that shows that word knowledge has an important role to play in comprehension (Cain et al. 2004; Vellutino et al. 2007). Knowing the words before hearing them in a narrative context is no doubt advantageous, however children come to school with different experiences that inform and develop their word knowledge; and consequently, they know and use different words. For this reason, the finding that children's vocabulary gains during this intervention were significantly predictive of narrative ability is a promising discovery and one that is crucial to supporting narrative growth in the classroom. It indicates that story-related vocabulary instruction, during narrative play, is a beneficial strategy for helping learners to comprehend stories and develop narrative proficiency, independent of their existing word knowledge. Several studies have suggested a possible correlation between word and narrative knowledge (Demir et al. 2015; Uccelli & Páez 2007; Nielsen & Friesen 2012; Gillam et al. 2014), and Dickinson et al. (2019) have shown these two competencies are closely intertwined, but the connection between these two has remained largely unknown. The findings from this study demonstrate that existing vocabulary knowledge is a fundamental building block for narrative comprehension; but more importantly,

that teachers can bolster children's narrative learning by providing explicit and thematically relevant vocabulary instruction.

The results from the mediation analysis reveal an important relationship between vocabulary instruction and adult supported play strategies. The identification of a mediator is particularly helpful as it explains the mechanism by which the directed play condition facilitated narrative learning. Essentially, the presence of a significant mediator implies that vocabulary instruction during story enactment leads to improved narrative comprehension and production. In other words, prompting learners to think about the meanings of words and how they relate to the story, helps children to make the necessary connections to make sense of the story. For example, "*Dragon, can you show us your scales? Scales are the hard plates that cover his whole body and protect it. They protected him from getting hurt when he flew into the lake!*". It is reasonable to assume then that the relationship is complementary—learning the words supports narrative comprehension, and in turn narrative comprehension supports the word learning; and this is a cyclical and complementary process. A child who learned *scales* in such a context will have associations with the word that are story-specific (e.g., dragon, protection, and fighting); such varied semantic links provide a rich corpus of connections to the word itself and, in turn, knowledge of the word contributes to grasp of the narrative. These results add support to the hypothesis that lexical knowledge and comprehension are closely related constructs (Perfetti 2007; Dickinson et al. 2019; Bolger et al. 2008). The words selected for this intervention may have played an important role in helping children to comprehend the narratives.

The target vocabulary was closely linked to key events in the stories and focusing on these concepts may have highlighted the word as well as the associated narrative concepts (See Appendix A). Such explicit attention to the target vocabulary, together with definitions and related

examples, possibly made these events and concepts particularly memorable. In addition to this, the toys were used as tangible representations of the target words. They were used to represent the words directly (e.g. the dragon's *nostrils*, *rungs* of the ladder), dramatize words (e.g. *charge*, *gallop*, *wearily*), and provide semantic and/or functional information about the words (e.g. *scales*, *talons*). It is possible that (1) drawing attention to the words, (2) making the words memorable with explicit definitions, representations and play actions, and then (3) connecting the words to the narrative thread, offered children deep and meaningful narrative and word learning opportunities. It should be noted, that vocabulary is unlikely to be the sole facilitator for narrative learning in this study, it is more likely that there were several supports that guided learning, for example prompting, asking questions, expanding children's utterances, and providing positive reinforcement (Lever & Sénéchal 2011; Kang et al. 2009; Kang et al. 2009; Kim et al. 2011; Zevenbergen et al. 2003). Nonetheless, the findings here are an important contribution the field as they show that learning narrative-specific vocabulary while enacting a story helps students to better comprehend narratives.

Adult supported Versus Independent Play for Developing Narrative Competence

The second objective of this dissertation was to understand how adult supported play versus independent play can assist children's narrative growth. As predicted, adult supported play helped children to produce more detailed narratives at the end of the intervention. In this section I examine the results presented and discuss these in light of strategies and characteristics of the different play conditions. First, I discuss the play results with respect to the narrative content and organization of play sessions. This is followed by a look at the differences in adult and child participation across

the three conditions. Finally, I provide an in-depth analysis of the principal features of the three

conditions, together with illustrative examples from the play sessions.

Narrative Content and Organization of Play Sessions

Overall, the results show that the DP sessions included significantly more story-related

play behaviors than guided play, and free play comprised the least story-related behaviors.

Furthermore, the narratives sequences were explicitly and completely constructed in the DP

condition, but less so in the GP condition.

In terms of narrative composition, directed play featured the most story-related utterances

as well as the most story-related non-verbal behaviors. On average there were, between 6 and 7

story-related comments, and approximately 2 story-related non-verbal behaviors every minute in

directed play. In guided play, there were approximately 3 narrative comments and 0.5 non-verbal

behaviors per minute. Free play had the lowest frequencies, with approximately 1.5 to 2 verbal

utterances and just under 0.5 non-verbal behaviors per minute. Although the frequency of narrative

events varied considerably by play condition, rising actions were the most common narrative play

components for all three conditions, and comprised around 40% of the narrative enactments for all

conditions (directed play: 46%, guided play: 38%, free play: 44%). These features were the most

conducive to play because they typically represented a performance or activity, and were often

closely tied to utilizing and manipulating the toy props. Moreover, children are likely to be familiar

with these narrative-features in play scenarios because the rising actions in stories are similar to

socio-dramatic play episodes, which is typically a series of events and activities (Pellegrini 1985b;

Hakkarainen & Bredikyte 2014; Eckler & Weininger 1989). While the children were adept at

enacting the physical action items of a narrative thread, they were less proficient with the intangible

and conceptual element of resolutions. However, with adult support, DP and GP players were able to participate in and contribute to the story conclusions (DP: *M*=1.2; GP: *M*=1.0; FP: *M*=0.3)

Figure 3 in the results summarizes the structural profile of the narrative in each play condition followed. In directed play adults presided over the organization of play and ensured that enactments followed a typical narrative arc. Play started with the various character introductions and settings. These were followed by rising actions that developed the events of the story up to a climax. In the final enactments, conflicts were resolved and the narrative was brought to a close. At all times, adults narrated the story events and directed children's behaviors to accompany these at the appropriate times. By contrast, guided and free play were led by the children, and as a result the organization of these play sessions paralleled children's natural dramatic play structures. First, there was no continuous or sustained storyline as is reflected in the uniformity of the event-types in the play profiles (Figure 3). Second, pretend episodes started at any chosen event, often without any introduction or orientation, and would develop or fade in accordance with adult and children's interest. Third, climax events from the stories (fighting and chasing characters) were enacted as isolated events, and so play episodes rarely culminated in a point of conflict or climax. Four, pretend episodes almost never reached a definitive conclusion; instead story threads abruptly stopped, started, and changed course repeatedly over the 10-minute session.

Adult and Child Participation

The results revealed significant differences in adult and child contributions between directed and guided play. Adults in directed play contributed significantly more to the play narrative than those in guided play. This difference is likely due to the guidelines and objectives for each condition. In directed play, adults were required to adhere to a script and recount the

complete story, and this meant that adults in the directed play condition focused on completing the story in the allotted time which left little time to explore children's ideas and contributions. Consequently, the proportion of adult to child contributions in the direct play sessions was heavily skewed towards adult talk, and this was almost four times that of children. In contrast, adults in guided play were tasked to follow children's lead and extend their play ideas; the only scripted guidance was for vocabulary instruction items. Accordingly, the narrative events in the guided play groups were equally constructed by adult (43.8%) and child verbal utterances (43.0%) because children were given time and opportunity to contribute and develop their own ideas. Adults in guided play, tended to wait for children to initiate a play event and then joined to participate in a play scene as a player rather than a director. This produced more balanced verbal behaviors.

With respect to child verbal contributions, there were no significant differences in the amount of child narrative talk across the groups. In other words, children participated equally in the verbal narrative construction regardless of adult presence or level of involvement. We expected children to talk more when afforded opportunities to initiate and share narrative ideas. We theorized that leading the play in this manner would encourage children to talk more, but this was not the case. There are several possible reasons for this. First, the guiding adult was relatively unknown to the children; a similar activity led by a familiar figure such as a teacher or caregiver, may be more comfortable for children and generate more child talk. Second, this play activity is notably different from normal class procedures, where teachers spend the majority of their time managing behavior and attending to children's needs, and very little time, if any, attending to children's dramatizations (Fleer 2015; Singer et al. 2014); therefore children may have been unfamiliar with expectations to participate and contribute voluntarily. Third, less skilled players

might have needed more adult modelling and guidance to learn the narrative and play skills required to participate more readily. While there was no measure of how experienced these preschoolers were with sociodramatic play, it should be noted that not all children participated equally in the play activity. Some children contributed extensively to play scenarios, others only joined when encouraged or prompted, and others were reluctant participants who positioned themselves in the edge, or even outside, of the physical play space.

Finally, the significant difference in non-verbal contributions between directed and guided play is to be expected. The low occurrence of non-verbal activity in guided play is most likely due to the fact that children were given opportunities to, and encouraged to, verbalize their ideas, therefore their contributions were recorded as verbal comments and not as non-verbal behaviors. As mentioned earlier, in directed play there was little opportunity to explore or extend children's ideas, rather the focus was to retell the story in its entirety, therefore verbal participation was low (15.6%). On the other hand, extensive adult narration and direction provided many opportunities for children to respond with unspoken enactment, thus non-verbal contributions were high (27%). The adult commentary served as a kind of running commentary that children used as guidance for enacting the story.

When comparing adult and child contributions *within* each condition, one can see that in guided play, adult and child contributions closely mirrored one another. The average number of orientation, rising action, and climax units were matched for adult (Orient:15%; Climax:13%) and child (Orient:14%; Climax:11%). Resolutions were rare for both children (3%) and adults (5%). These results underscore the advantages of the guided play sessions where children are given ample opportunity to communicate their narrative ideas and practice storytelling with adult assistance. In contrast, directed play was dominated by adult narrative talk (78% of all verbal

contributions), and half of this adult talk was dedicated to rising actions (36%). Adults in directed play spent considerable time on climax (17%) and resolution (15%) units; however, children did not mirror this, and their climax and resolution units totaled to only 5%, of all talk. These findings are discussed in more detail in the next section.

The Distinguishing Features of Narrative and Play by Condition

The following section consolidates the findings by examining the distinguishing features of the three play conditions in relation to the results presented, and discussing the extent to which children experienced elements of narrative and play. Examples from the play sessions are included to illustrate the characteristics of the play conditions. For the sake of clarity, these examples do not include any non-relevant exchanges, such as toilet breaks, administrative interruptions, or irrelevant behavior management. Where applicable, descriptions of non-verbal behaviors are provided in parentheses. Finally, target vocabulary—words that were explicitly taught during the intervention—are bold and underlined for easy reference.

Directed Play. Directed play was distinct from the other conditions in several ways: (1) the sustained participation in a story world, (2) the quantity of narrative talk, particularly from adults, (3) the connected and structured narrative play that was developed to a conclusion; (4) vocabulary instruction that was directly connected to the immediate narrative concept and enactment. This next section examines the narrative play results and discusses how adult and child narrative behaviors and contributions established the features of directed play.

Directed play sessions typically started with an introduction of all characters and settings from the story. Unlike the other two play conditions, orientations in directed play drew players into narrative world and established the expectation all players would participate and collaborate

to tell a story. This example from a directed play session illustrates how orientations were used to assign character roles and set the scene, but also to indicate the start of shared dramatic play rather than simple object manipulations. Four children participated in this play session; therefore, the adult assigned the knight character role to children to perform together.

> *Adult: So now we are going to play knight and dragon. One of you can be the princess and then two will be a knight and one a dragon. I will remind you of the story so you can play knight and dragon. Remember to wait for me to tell you what is coming next so you can make the knight, and the dragon, and the princess act out the story. Who was the knight yesterday?*
> *Child 1: Me.*
> *Adult: Okay so you can be the dragon [hands out the other characters]. There was a knight in a castle who had never fought a dragon and a dragon who had never fought a knight. Let's put the knight in the castle.*
> *Child 2: Knight, knight, knight. Okay here he is.*
> *Child 1: I'm going to say goodbye*
> *Adult: Not the dragon just yet. Hold on to the dragon, he's coming in a minute. The two knights are going in the castle please. {Child 1} wait please. I need the knights in the castle. [Child 2 and 3 put knights on top of castle] Good job.*
> *Adult: And where is the dragon's cave?*
> *Child 1: Right here [places dragon in the castle dungeon]*
> *Adult: Okay, we can pretend that's the cave*
> *Child 3: That's the library.*
> *Adult: Well we can pick a different spot. {Child 4}, you can sit right here. There was also an **intelligent** princess in the castle who did not like fighting. Remember, **intelligent** means that someone is very smart. So, let's put the **intelligent** princess in the castle library where she reads her books. Is the library her favorite room in the castle? So, where do you want that to be? Put her in the library.*
> *Child 4: Right here. And she needs some books.*

On average, directed play groups produced more than double the number of rising actions than guided play groups, and over five times that of free play, this was because the DP scripts that guided adult talk covered all the rising action events from the intervention stories; and required adults to discuss each in considerable detail. This accounted for the higher average number of rising actions, particularly from adults. The following excerpt, taken from the DP scripts, is an

example of the adult led discussion about the knight preparing for the fight. In this exchange the

adult discusses the many actions the knight must perform to prepare for the fight.

> *"The knight put all of his weapons together. He sharpened his sword. He painted his shield that would protect him against the dragon's fire. The knight needs a sharp weapon to attack the dragon with. Does he have one? Where is it? The knight has all the weapons he needs to fight the dragon. Knight, do you feel ready for the fight?"*

A third feature of this condition was the clear narrative structure that the play sessions

followed. In the DP groups, the rising actions were explicitly connected to the story climax events,

for example, "*Knight, put your armor on so that you can fight the dragon*" (*put on armor* = rising

action, *fight the dragon* = climax event). Because of this, participants were able to develop the

many rising action activities and make more connections to the climax ideas, and ultimately

directed play averaged the highest number of climax events per play session ($M=12.7$, 20%),

compared to guided play ($M=7.2$, 24%) and free play ($M=2.0$, 18%). Figure 2 in the results section

illustrates this close connection between the rising actions and climax features where the bulk of

rising actions occurred in the first three to four minutes and from minute five, rising actions and

climax elements occur together. Another unique feature of the directed play was the extent to

which the story climax was described and coordinated. This excerpt from the directed play scripts

illustrates this detail.

> *"The knight and the dragon met for the fight Where should the knight and the dragon fight? [wait for children to respond]. They met and started attacking one another. The knight's horse **galloped** toward the dragon, and the dragon breathed fire, but they kept running past each other! Let's put the knight on his horse. **Galloping** is when animals run very fast. The knight's horse is galloping toward the dragon, and the dragon is running toward the knight, but...oh no! They missed again....*
> *In the meantime, the knight and the dragon kept **charging** at one another. **Charging** is when people or animals run at something to attack. The knight **accidentally** flew into a tree. The dragon flew into a lake and set some trees that were behind the lake on fire. Let's see how the dragon and the knight **charge** at one another. Oops! What just happened? What's the knight doing in the tree? What's the dragon doing in the lake?"*

Directed play enactments were concluded with a discernable resolution (unless there was an interruption that could not be avoided). The story outcome was made explicit and reiterated many times. DP had significantly more resolutions than GP (d=1.8) and FP (d= 2.60), but it should be noted that the majority of resolution comments were made the adults (88%). In fact, the *children* in DP (M=1.2) contributed almost the same number of resolution ideas as those in GP (M=1.0), and the average number of resolutions was notably very low in comparison to the other event-types. This is likely due to the fact that preschoolers are unfamiliar with resolution events, in narratives (Peterson & McCabe 1983) and in play (Fleer 2011; Hakkarainen & Bredikyte 2014) and were therefore less likely to contribute to this part of the narrative. Additionally, children started to wane around the eighth minute of play, the same time that resolutions were introduced. By this time children were approximately 18 minutes into the intervention session (including a ten-minute book reading and story review session) and were possibly tiring.

In the following example from a directed play session, the children enact the climax of 'The Knight and The Dragon' story where the dragon falls in the water and the knight lands in a tree. Next, the adult directs the play towards a narrative resolution where the characters read books about making a barbeque so they can learn to do something together and get along. Note the intimate connections between story events and word meanings.

> *Adult: The knight accidentally flew into a tree. The dragon flew into a lake and* ***accidentally*** *set some trees, that were behind the lake, on fire. What do you think will happen now? [child 1 crashes dragon toy into tree]*
> *Child 1 and 2: They read books.*
> *Adult: [nodding] the dragon and knight got new books. What are they reading about?*
> *Child 2: Barbeque…. And umm….*
> *Child 1: (with dragon) I'm cooking. [takes dragon and blows on the plate of food]*
> *Adult: The knight and the dragon opened a restaurant together. The dragon cooked the hamburgers with his fire, and knight carried the food to the customers. They were friends now. The princess was so happy because the knight and the dragon were not* ***enemies*** *anymore, they were friends! The princess enjoyed the tasty hamburgers the knight and the dragon made.*

Child 2: Where's the hamburgers?
Adult: You got to just pretend.
[Child 3 hands child 2 the plate of food]
Child 1: Like this. [makes the dragon eat from the plate]. We got to be friends.

A central characteristic of directed play was the use of vocabulary instruction to explicitly connect the words and the narrative. The transcript below illustrates how this was achieved. In this example, the adult taught the word "scales". First, the target word was introduced in direct connection to the narrative episode at hand (*"The knight and dragon kept fighting. The dragon's* **scales** *protected him and the knight's armor kept him safe"*). Second, once the word was introduced, it was explicitly defined (*"***Scales*** *are the hard plates that cover his whole body and protect it"*). Third, the target word was tied to enactment (*"Dragon, can you show us your* **scales***"*). Fourth, word-related story concepts were immediately connected to other story events or concepts, underlined in the following example. (*"His* **scales** *… also protected him from getting hurt when he flew into the lake!"*). Finally, the target vocabulary word was connected to many concepts, semantic and narrative (these are underlined in the example). Figure 6 shows the network of concepts and connections from this excerpt (semantic concepts are shown in light grey and narrative concepts shown in dark grey).

"In the meantime, the knight and the dragon kept fighting*. Every time they* attacked *one another they* missed*. The knight flew into a tree. The dragon* flew into a lake *and* set some trees on fire*. Luckily, they* didn't get hurt*. The dragon's* **scales** protected *him and the knight's* armor *kept him safe! Dragon, can you show us your* **scales***?* **Scales** *are the* hard plates *that* cover his whole body *and* protect *it. They protected him from getting hurt when he flew into the lake!"*
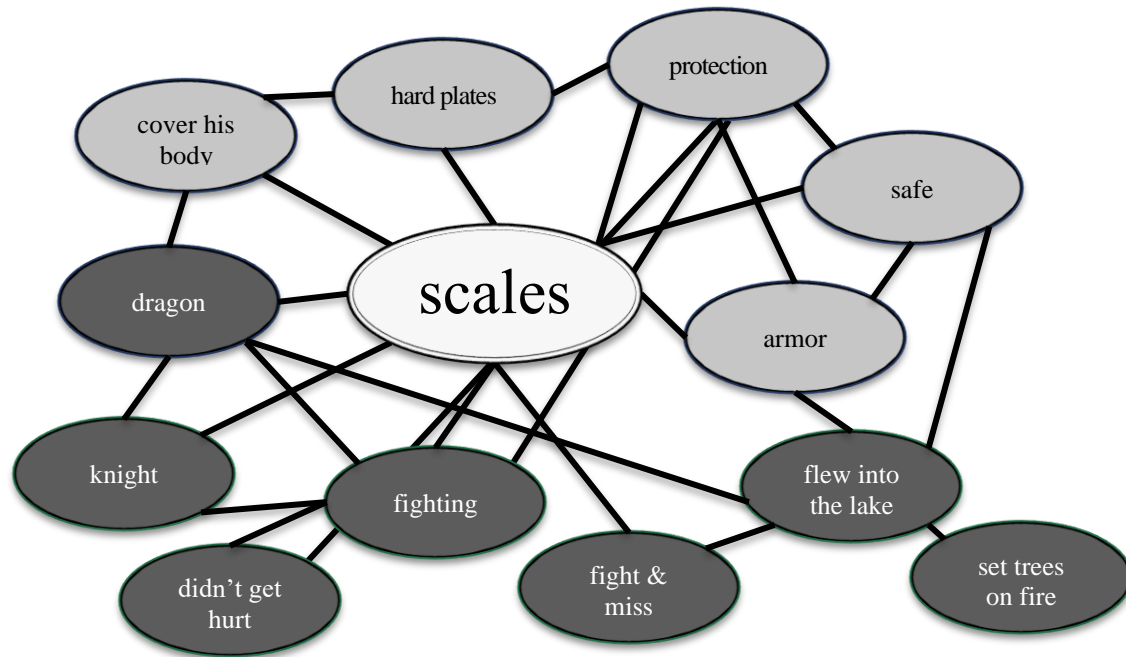
Figure 6. Network of Concepts and Connections for "Scales" as Taught in Directed Play

In directed play, vocabulary instruction served two purposes. The first being a narrative outcome: the word prompts drew attention to central story events, and presented several opportunities to link these events to playful enactment and other story concepts. These connections deepened story comprehension. The second being a vocabulary outcome: vocabulary instruction enabled children to deepen their understanding of a word by learning explicit definitions, hearing and saying the words frequently, and connecting the words to enjoyable and meaningful experiences. It is likely that vocabulary instruction helped children to create multiple connections between words and story episodes, creating a rich network of interconnected information. This network, in turn, made the words and story episodes more salient and memorable (Trabasso & Van den Broek 1985; Van den Broek et al. 1999; Van den Broek et al. 2011; Van den Broek et al. 2005).

Guided Play. Some of the most notable features of guided play included: (1) the focus on short pretense sequences rather than creating a narrative frame; (2) child-initiated play episodes where adult followed children's lead; (3) the leap frog structure of play episodes with limited connections between story events and a lack of closure or conclusion; (4) the balance of narrative contributions between adults and children; and (5) the use of vocabulary instruction to reinforce definitions and connect to background knowledge. The following discussion looks at the results presented and discusses how these features of guided play materialized.

Similar to direct play, orientations in this condition served as a starting point for play but the introductions were brief and but did not set up a story-related frame for play or establish any narrative expectation. Adults were provided with an opening introduction to the play activity, provided below, and then asked to follow children's play ideas. When compared to the directed play introduction provided earlier, there is a notable difference in the activity goals. The DP introduction established a narrative focus, while the GP introduction asked children to simply play and offered no direction or guidelines with regards to how they should play or what they should play. Moreover, there was no mention of make-believe or cooperation, and at times, adults had to provide extensive guidance to stimulate pretense and collaboration, particularly in the first session.

> *"Now, it's time for us to play with the toys! You can play Farmer Duck if you like or something else. Just remember the toys are for all of us to play and have fun. So, we will play together! Let's take our farm out, and (take out the bag with the toys) here is the duck, here is the farmer, here is the sheep, the cow and the hen. And here all the other toys (empty the bag's contents)."*

Of course, players with more experience and confidence were able to jump in and get started without too much prompting. Similarly, some adults found it harder than others to sustain or develop children's play ideas. The discrepancy in proficiency and confidence of players (adults and children) had a notable impact on the development of play episodes in guided play. Adults

who were more familiar and comfortable with dramatic play were able to draw children into a make-believe world more readily and subsequently co-construct longer and more complex scenes with children. In this example, the first child invites the adult to take on a role and engage in a pretend episode to visit the farmer. The adult comments and connects this initiation to the story and suggests that the farmer is lying in bed, but doesn't take on a character role and join in the pretense. The adult is then distracted by child 2 and deals with toy allocations, and instead of returning to the play space to extend the episode proposed by child 1, she turns to her notes. The pretense ends there and the children's attention shifts to playing with the bed and pitchfork.

> *Child 1: [to Adult] Come on, you be the cow. I will be the sheep. Let's go see the farmer.*
> *Child 2: I want to be the duck!*
> *Adult: Where is the farmer? Is she in bed?*
> *Child 2: Girls can be farmers too?*
> *Adult: Yes.*
> *Child 1: Where's the bed? I need to put my sheep in the bed.*
> *Child 2: My duck is in the bed. Leave him!*
> *Adult: [to child 1] You can have your turn in a minute. Why don't you play with these?*
> *[hands child pitchfork and hay. The adult's attention turns the guided play notes and directions and children abandon play and start to manipulate toys]*

One of the design features of guided play was that children initiated the play scenarios. Thus, adults waited for a child to suggest or start a play idea and then stepped in to extend the idea. On the whole, the extension of play ideas was limited to only two or three prompts, questions, or suggestions, and then the adult would move on to engage in a different activity, often with a different child. This approach resulted in several disconnected play episodes that did not progress along the lines of a narrative. This can be seen in the following example where a child invites the adult to take up a character and perform some farm work. The adult responds by suggesting some work activities, collecting hay and feeding sheep. The child then takes on the role of the lazy farmer and recites a phrase similar to that in the book "How goes the work?" The adult connects

this to a subsequent rising action event - the sheep gets tired from doing all the work, but the narrative thread ends there and is not developed to similar farm work events or to the next stage in the story where the animals feel sorry for the hard working character and make a plan to kick the lazy famer out.

> *Child 1 to Adult: Let's pretend that you are the farmer girl and you are doing all the hard work.*
> *Adult: okay. Can I have the farmer girl? Thanks. And doing all the hard work like working with hay. Yeah?*
> *Child 2: That's hay?*
> *Adult: yeah. I'm going to feed the sheep.*
> *Child 1: How's the work doing?*
> *Adult: Well this farmer girl can't say quack so she has to say, "It is going good but I am getting tired".*
> *Child 1: Keep doing it.*
> *Child 2: I'm going to put you in time out!*
> *Adult: [To Child 3] That's not how we play with the tree. Can you maybe use the shovel? What's it used for? Here's the field, why don't you dig with the shovel? [The adult observes the children and waits for another play event to step into and extend]*

Another feature of the guided play sessions was that adults rarely attempted to develop rising actions to connect to the story climax. Instead, the adult would extend the rising action idea for other purposes such as expanding the play narrative to draw other children and their characters into the play narrative (see guided play example 1 below) or inserting vocabulary instruction (see guided play example 2 below). In the first example, child 1 initiates a rising action where the knight and dragon read books; in the story this was done to prepare for the fight. The adult starts to engage in the narrative play and then uses the activity to draw another child back into play. At this point she becomes distracted and drawn into the second child's demands and abandons the play scene with the first child. In the second example the adult skillfully weaves in discussions about the target vocabulary words, possibly at the cost of developing narrative and collaborative play. Here, child 1 initiates a rising action where the characters work on the farm; this child proposes they dig.

The adult works in a discussion about weeds, one of the target words. The second child responds and continues with the play narrative. The adult follows suit and attempts to address a second vocabulary word (wearily). The second child responds appropriately but at this point both children abandon the play narrative.

Example 1:
Child 1: I got my books.
Adult: What they doing?
Child 1: Reading
Adult: What are they going to read about?
Child 1: The dragon and the knight
Adult: Right, the knight and dragon. {Child 2 name} why don't you come and read books with {Child 1}. She is reading about the knight and dragon.
Child 2: No, I want to be the knight.
Adult: okay, here you go [hands child knight toy]
Child 2: I need a sword. [adult searches for sword accessory. Play scenario is abandoned while adult looks for toys]
Adult: Here. [Child 2 attaches sword to knight toy then leaves the play scene. Child 1 manipulates knight toy and accessories]

Example 2:
Child 1: We need to dig. Where's the shovel?
*Adult: Here's the shovel. I'm going to use the shovel to dig up all the **weeds** in this field. Do you know that **weeds** are plants that grow where they are not wanted? Do people like having **weeds** in their garden?*
Child 2: No. Where's the sheep, I want him to sleep.
*Adult: No, they want to get rid of them, right? How do you clean out the **weeds** in your garden?*
Child 1: A shovel. I need to go to the shed. Moooo.
Child 2: [takes the duck up the ladder]
*Adult: Is the duck **wearily** climbing up the ladder?*
Child 2: Hmmmm?
*Adult: **Wearily** is how you go when you're tired.*
Child 2: Yeah! He's all the way up there.
*Adult: Do people go slow or fast when they go **wearily**?*
Child 2: Slow.
*Adult; What can we do if we are **weary**?*
Child 2: Walk slow.
Adult: or take a rest? [Children start to arrange and manipulate toys and abandon the collaborative play]

Although rising actions were rarely developed to connect to the narrative climax, when children introduced climax episodes, adults used these opportunities to connect the climax *back* to other elements of the story, including the preceding rising actions. Climax episodes were popular with the children in the guided play sessions, as these involved characters fighting or chasing one another. Such activities were more prevalent in guided play (*M*=3.3, 11%) than in directed play (*M*=1.8, 3%), because children in guided play were allowed to generate their own preferred enactments, while adults in directed play limited fighting and chasing to the climax scenes. This next example shows how the adult in guided play steps into the children's fight scene and uses this opportunity to extend the climax activity by discussing how the characters are charging and missing each other. Additionally, she connects the climax back to the idea that the knight and dragon are enemies and decided they need to fight and then connects that to the current fight.

[Child 1 and 3 are bashing knight toys and making fighting noises]
*Adult: I think I'm going to start **charging** the knight, running very fast at it… to attack it…*
*[Adult takes dragon and **charges** child 3's knight. Child starts to play independently making fighting noises while manipulating knight toy]. I'm going to get you. Is charging fast or slow?*
Child 3: Slow
Adult: No, it's fast. [Puts down dragon toy to attend to play scripts].
Child 3: Oh no. I fell. Oh no!
Adult: oh no, did the knight and dragon missed each other?
Child 3: I'm fighting. [Holds up sword to show adult]
*Adult: He's fighting. Why were the knight and the dragon **charging** at each other? [No response. Children continue to play fight or examine books]*
[Child 3 moves towards child 1 and resumes play fighting with child 1]
*Adult: Why were the knight and the dragon **charging** at each other, guys? [No response]. Listen, why were the knight and the dragon **charging** at each other, guys?*
Child 3: Cos I like her [child 3 hugs child 2].
Child 2: Cos they like to.
*Adult: They were **enemies** and they decided to fight. Now they are **charging** each other.*

Guided play sessions did not follow a typical narrative sequence, but adults did make regular connections between similar narrative events, such as connecting rising actions to other

rising actions; as well as between different narrative features, such as connecting climaxes to resolutions. Resolutions were uncommon in guided play (M=2.6, 9%) particularly when compared to directed play (M=10.7, 17%). This was expected as resolutions indicate the end of the storyline, and thus the end of play. This notion of 'the end' is contrary to the very essence of natural child's play which has no end goal (Fleer 2011; Hakkarainen & Bredikyte 2014) and therefore an infrequent event in children's play worlds. The resolutions that were enacted in guided play were rarely about bringing the story thread to a close, but rather about enacting an ongoing activity, similar to a rising action episode, for example, pretending to cook food. This is a typical example of resolution episodes in guided play.

Child 1: who wants a cook book?
Adult: I want a cook book. I want to learn how to cook.
Child 2: What's a cook book?
Adult: Oh, that's how you do it! (blowing sound) I'm going to build a fire for the hamburgers and cook them
Child 1: I'm still reading my book.
Child 2: Oh no you don't
Child 1: Oh yes, I do
Adult: Lets cook some burgers.
Child 3: I want to cook too.

Another difference between directed and guided play is the contrast in the adult-child interactions during the play sessions. The results revealed a significant difference in adult-child talk balance across the two adult supported conditions. Children in guided play provided 43% of all narrative talk, and adults provided 43.8%. By contrast, children in directed play contributed only 15.6%, and adults produced nearly four times that (57.4%). This finding has important implications for classroom learning as much research has found that that a higher ratio of child-to-teacher talk in preschool is associated with greater language gains (Dickinson & Porche 2011; Newman 2019; Farran et al. 2017). Despite the fact that the ratio of adult-child talk was appreciably

different, the average number of narrative comments from *children* was similar across the two conditions (DP: *M*=13.4; GP: *M*=14.9); but, the essence of child talk was not the same. Specifically, comments from children in directed play were usually in response to questions, prompts, and directions from adults; while those in guided play were typically spontaneous and reflected children's narrative observations. The same was true for adult talk. In DP, adults concentrated on enacting the narrative and rarely attended to children's misunderstandings or divergent comments. By comparison, adults in GP were more likely to engage with children's thoughts and ideas, regardless of whether they were based in the narrative or not. These insights are important to note as appropriate adult responsive strategies, such as those seen in guided play, that have been positively associated with language and literacy gains (Neuman & Dwyer 2009; Hindman et al. 2019; Dickinson & Porche 2011; Newman 2019; Levy et al. 1992; Peisner-Feinberg et al. 2001).

The most revealing contrast between the two adult supported play conditions was seen in the methods for vocabulary instruction. The example below illustrates a typical vocabulary conversation in GP for the target word "scales". Similar to the instruction seen in directed play, adults introduced and clearly defined a target word when an associated play event presented itself (*"Scales… are pieces of thick hard skin"*). A second feature of the instruction in GP, was that target words were frequently connected to children's background knowledge and experiences (*"Do you have scales?"*). This is a particularly effective word learning practice that directed play did not utilize. Third, adults in GP frequently talked about words in a nonspecific context (*"Who else has scales?… A fish"*), and once again, this strategy was not implemented in DP. Fourth, words were frequently discussed in connection to play actions and toys, but they were seldom, and only briefly, connected to relevant story events or concepts (*"Will the dragon's scales protect him*

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if he fights the knight?"). Fifth, because guided play consisted of several disconnected play episodes, that did not follow a narrative thread, when words were used by teachers or children they were not embedded in a clear narrative sequence. Finally, like DP, the target vocabulary word in guided play was connected to several concepts (these are underlined). However, most of these were semantic, and only a few connections were made to the narrative. Figure 6 shows the network of concepts and connections from this excerpt (semantic concepts are shown in light grey and narrative concepts shown in dark grey). In this guided play example, connections were made to semantic (*"hard pieces of skin, cover his body, protection"*) and synonymous (*"fish have scales", "I don't have scales"*) concepts, but only one cursory connection was made to the story (*"**scales** protect him if he fights the knight"*). This network is noticeably different to the figure from the DP discussion (See Figure 6 on page 106), where the network of ideas was fuller, and the word and narrative concepts were intertwined; and consequently fostered deeper word knowledge and better narrative comprehension.

> *Adult. The dragon's <u>body is covered </u>with **<u>scales</u>**. They are <u>pieces of thick hard skin</u>. Will the dragon's **<u>scales</u>** <u>protect him</u> if he <u>fights the knight</u>?*
> *Child 2: yeah*
> *Adult: Why does a dragon have **<u>scales</u>**?*
> *Child 2: So that he can protect himself.*
> *Adult: Do you have **<u>scales</u>**?*
> *Child 3: No*
> *Adult: No, we don't. <u>Who else has **scales**</u>? [no response]. <u>A fish</u>.*
> *Child 3: I got my library book.*
> *Adult: yeah, that's right.*
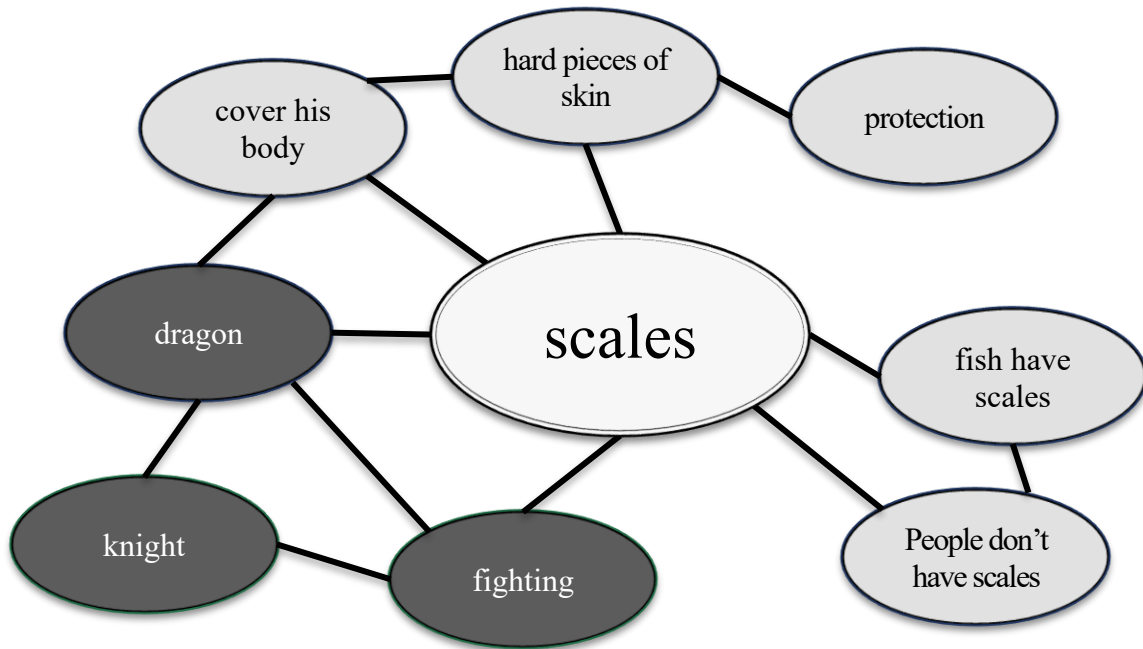> *[Children continue to play]*

Figure 7. Network of Concepts and Connections for "Scales" as Taught in Guided Play

One last observation regarding children's play experiences, is that individual's participations were more likely to be variable in GP sessions than in DP sessions. This was possibly due to the expectations and requirements of each condition. In GP, adults were guided by children's contributions, and those players who were less verbal or less confident were less likely to spontaneously offer ideas, initiate play, or respond to adult comments. Thus, some children frequently drew adults into interactions, and other children received less (at times, considerably less) time and attention from adults. In contrast, the DP method established each child's role and participation upfront. Moreover, players were prompted, and assisted where necessary, to contribute to several episodes in the story. These observations are supported by research that shows that children's language proficiency can affect teachers' attentiveness which can, in turn, lead to disengagement from less verbal children (de Rivera et al. 2005; Girolametto & Weitzman 2002;

Girolametto et al. 2000). The data presented in this study do not allow us to measure the extent of this perceived disparity, nor are we able to systemically analyze the causes. However, these observations are important to bear in mind when considering the advantages and disadvantages of the two play support strategies; as well as considering which children may most benefit from these approaches. Overall, the guided play method featured some important benefits; most notably, that adults that engaged children as equal and active participants and provided opportunities for children to talk and share their ideas and interpretations with the group (Rowe 1998). Given the growing concern that there are limited opportunities for child-initiated talk in many preschool activities (Farran et al. 2017; Hindman et al. 2019; Hindman et al. 2019; Neuman & Dwyer 2009), it is important to recognize guided play as a setting that may offer a language-nurturing environment that is much-sought after in early childhood classrooms.

Free Play. Similar to the findings from Dansky (1980b), the free play condition in this study was found to be the least beneficial for narrative learning. The following examination of the characteristics of this method, particularly in comparison to the adult supported play conditions, reveals some important insights into why this independent play method may not have provided the same narrative learning opportunities as the adult guided play activities. The defining features of free play were: (1) lack of collaboration and cooperation among players; (2) focus on toy manipulation rather than pretense or a story enactment; (3) sporadic play episodes with few connected events and a notable absence of closure or conclusion, and (4) infrequent use of vocabulary during play.

The most distinguishing feature of the free play condition was that cooperative play was scattered and infrequent, and this is considered age-appropriate for four-year-olds. One might expect to see lower verbal contributions from children in FP due to this characteristic, as players

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would have little need to articulate play ideas or reveal character motivations to other players. Yet analysis of the play behaviors showed that there was no significant difference between children's verbal contributions across the play conditions, and this is largely due to the fact that adults in DP and GP played a pivotal role in helping children to coordinate ideas and play together. Lack of collaboration was evident from the start of play in FP sessions. Orientations in the free play groups averaged less than half of those in the adult supported groups, because children focused mostly on toy allocations and negotiations and not on establishing a collective activity or shared play narrative. This is evident in the following example:

> *Child 1: Where's the dragon?*
> *Child 2: I want to get that? I want get that?*
> *Child 1: That's my dragon. You have the princess. Here.*
> *Child 3: And me?*
> *Child 1: You can be the knight. He's there in the castle.*

Once children had distributed toys, they focused on the assembling, attaching, and detaching toy accessories, and toy manipulation was the most prevalent play behavior in free play sessions. This activity occupied the majority of children's time, attention, and conversation; therefore, children rarely engaged in pretense as can be seen in the significantly lower number of rising actions in FP (M=5.1) compared to the adult supported sessions (DP: M=28.6; GP: M=11.6). The few pretend episodes that were enacted were mostly the rising actions from the stories, but these events were seldom discussed beyond one or two comments and it was uncommon for players to extend or connect a play event to other story ideas (See figure 3). These observations are consistent with the play research from Hakkarainen & Bredikyte (2014; 2010) that suggests that very few preschool children are able to develop narrative scenes or engage in cooperative pretend play scenes without adult assistance. Below is an example of a typical story-related exchange between players in free play which shows children using elements of the knight and

dragon story to engage in play. Child 1 and 2 start up a scene from the story where characters find and read books about knight and dragon fighting. Child 3 attempts to get involved, by initiating the fight scene from the story. Neither the book nor the fighting play episodes develop beyond a few exchanges, and although these two events are related in the books, this connection is not made here and children return to playing independently.

> *[Child 1 spends several minutes assembling the knight toy. Child 2 plays with the toy books in a small Tupperware.]*
> *Child 1: Hey I need a book about fighting.*
> *Child 2: Hey knight, what you doing?*
> *Child 3: [Takes dragon and attempts to fight Child 1's knight]*
> *Child 2: No don't*
> *Child 3: [Dragon attacks Child 2's princess] Yum, yum, I want to eat the princess.*
> *Child 2: Don't! I want the books.*
> *[Children return to playing independently]*

More experienced players were more adept at developing collaborative play with a narrative thread. These usually involved scripts from general play experiences such as playing family characters (e.g. mother, father, child), cooking food, or fighting. At the same time, children frequently incorporated ideas from the stories into these scenes. This is an example of a three-minute interaction of collective play in the free play condition where the children enacted a family-like sequence. The children in this group often played cooperatively over the four play days and in this scenario, three children participate in creating a collaborative play scenario, the fourth child was present in the play space but did not participate verbally or non-verbally in this scenario. Child 1 has a knight and is pretending to be married to the princess. Child 2 has two dragons and wants to fight the knight (as depicted in the story) and stop him from kissing the princess. Child 3 is playing with books in the castle. The princess toy is nearby, and child 3 bring her into the scene to read books and offer the knight or dragon books, as she does in the book.

Child 2: Here's two dragons. [Shouting and fighting sounds with 2 dragons together]
Child 1: Knock knock
Child 2: Who's there?
Child 3: Who you looking for?
Child 1: I am looking for the princess kiss?
Child 2: A princess kiss? No, don't give her a kiss. I'm going to hit you.
Child 1: I'm going round to the back yard. Knock, knock.
Child 3: Who is it?
Child 1: I'm here for the dragon.
Child 2: And where's… where's….?
Child 1: I'm here for the princess, I mean.
Child 2: A princess to give her a kiss? No! I'm a dragon, I will fight you. Leave the princess alone.
Child 3: Where's the princess?
Child 1: In the castle.
Child 3: Here she is. She is reading my books. Do you need books?

These children were experienced players and participated actively in each other's ideas. Some groups had only one active player, and in these instances, the skilled player would attempt to create and maintain a narrative arc alone. At times they would attempt to draw other players into the play world, but this was generally unsuccessful. In this next example, child 1 initiates a play narrative with a princess character. Child 2 responds verbally and non-verbally, but never takes up the enactment or collaborates to create a narrative.

Child 1: [the princess stands… look at the books]. What is that? What are these books? [opens books]
Child 2: I need a friend [manipulating and assembling knight toy]
Child 1: [holds up princess toys and asks adult] How's she going to hold these?
Adult: You're just going to have to hold it in her hand for her. Hands doesn't really squeeze shut.
Child 1: [Puts a book in princess's hand and motions to the knight] Here boys, no more fighting.
Child 2: [still holding knight toy, takes book from princess]
Child 1: Now I got to go back up to the castle. I'm going to have to turn her around.
Child 2: [continues to manipulate knight toy and accessories]
Child 1: I'm going to open up the book and look inside. [Takes a knight and dragon and starts a fighting scene between the two characters]. Arrghh don't put fire on me.
Child 2: [Continues to manipulate knight and accessories]

While children engaged in pretend play with the objects, this was rarely structured into a story-like narrative, and therefore free play climax events (*M*=2.0) were notably lower than the adult supported groups (DP: *M*=12.7, GP: *M*=7.2). As mentioned, there were sessions with skilled players and they were able to independently order a handful of play events to create short narrative play episodes, but the connection between the narrative actions was not necessarily verbalized or made explicit. This is an example of a narrative sequence from a rising action to a climax in a free play group with three experienced players. The play events are sequenced according the narrative but the connection between the events is not explicit. Child 1 has the princess toy and books, child 2 and 3 have knight characters. The scene starts with the princess who has books about fighting dragons and gives them to one of the knights (rising action). The knight reads the books (rising action) and the second knight gets his sword and helmet (rising action). The two knights start to fight (climax).

> *Child 1: I have a book about dragons*
> *Child 3: about fighting them?*
> *Child 1: yep. You can have them now. And here's a purple book.*
> *Child 3: purple book? With dragons on it? [takes knight and pretends to read book]*
> *Child 2: where my swords?*
> *Child 3: up here*
> *Child 2: this is my costume (showing knights helmet)*
> *Child 3: this is really sharp [attaching sword to knights' hand].*
> *[Child 3 shouts and attacks child 1's knight with own knight and sword. They begin to play fight.]*

Like guided play, free play episodes did not feature many resolutions. In fact, only seven free play sessions mentioned any narrative resolution events. The most elaborate resolution episode came from a little boy talking to the supervising adult. Here you will see that the child talks about the dragon and knight being friends and getting along, but this was not done with any references to concluding a play episode, instead the child is simply relaying ideas taken from the

story. Moreover, the element of play or story is missing; this child is simply commenting on the toys.

> *Child 1: Where's the knight*
> *Child 2: I'll get it dragon.*
> *Child 1: Ohhhh. I'm going get that book. I'm going to get that book.*
> *Child 1: [to adult] I like this one [holding up knight toy]*
> *Adult: I like it too.*
> *Child 1: Where did it come from?*
> *Adult: I don't know where it came from.*
> *Child 1: I got this one at home. Yeah, I got everything at home.*
> *Adult: wow!*
> *Child 1: And the dragon is the best friend of mine [holds up the knight toy to show the adult]. The dragon loves him.*
> *Adult: So, they're friends.*
> *Child 1: Yeah, just like the story of ours. They get along.*
> *Child 2: [takes horse toy and attacks child 1's knight] Aarrgghh!*
> *Child 1: hey! You're no the dragon*

Finally, because FP did not involve any adult participation, there was no vocabulary instruction. In GP and DP sessions, adults regularly reminded children of target words, particularly when they related to the immediate play episodes. Moreover, adults referenced possible connections between the target words and children's background knowledge. These prompts oftentimes encouraged children to use the words or echo phrases from word-related discussions. This was notably absent in free play, and while a tally of target word use was not included here, coders noted that the use of target vocabulary was rare in FP sessions.

Summary of Play Findings

The descriptive comparison of the three play conditions highlighted core differences in the narrative and word learning experiences that are likely to have contributed to the varying narrative outcomes. In sum, the play conditions differed in three notable ways: the structure & connectivity

of play episodes; the quantity and balance of adult-child participation; and the nature of vocabulary instruction.

First, in directed play adults and children created a collaborative, sustained and complete narrative. To this end, DP followed a classic narrative sequence with orientations at the start, followed by rising actions which led to a climax and finally concluded with the story resolution. More than that, DP did not just involve retelling the story events, rather adults made explicit connections between the enacted events and discussed how events progressed the story. Guided play sessions involved episodic pretense sequences that were not part of a story frame. Instead, children engaged in discrete pretend episodes where they used the toys in imaginary ways to depict interesting action sequences that may, or may not, have related to the story. These pretend episodes leap frogged between the different narrative events and there was no clear progression of a narrative. Similar to guided play, the free play sessions did not follow any narrative structure. Without any adult support, children in FP were less likely to establish a shared pretend space, or shared point of reference, such as the book story, where they could collaborate and create play sequences. Rather, play tended to focus on manipulating toys and only a few story events were enacted. In sum, children in directed play experienced a complete and connected narrative enactment that reinforced the story in its entirety. Guided play children enacted salient and enjoyable aspects of the story but did not make necessarily explore the relationship between these and other narrative concepts, or the relationship to the overall story. Free play children explored the toys and occasionally enacted simple play actions.

Second, while the quantity of narrative-talk from children was similar, adult narrative talk was significantly different across the conditions. In the DP condition, scripted narrative direction meant that the activity was dominated by adult talk and the results from this study align to findings

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that show that explicit adult instruction is beneficial, and possibly necessary, for improving narrative comprehension and production (Pellegrini & Galda 1982; Pesco & Devlin 2015; Pesco & Devlin 2015). Overall preschoolers have great difficulty constructing complex storylines in their play scenarios (Trabasso & Nickels 1992; Hudson & Shapiro 1991; Shapiro & Hudson 1991; Hakkarainen et al. 2013); and the benefit of a directed approach is that adults can teach children how to create complete narratives, where orientations, rising actions, climaxes, and resolutions are appropriately sequenced and connected (Hakkarainen & Bredikyte 2014; Nielsen & Friesen 2012). Guided play results revealed a more balanced adult-child talk ratio and this is reflective of the method implemented. Adults were instructed to wait for children to initiate play ideas and then insert themselves in to the play and participated as an equal contributor. It is important to note that considerable research has highlighted the value of child verbal participation for language and literacy development, and emphasized the need for more child-focused activities in the preschool classroom, such as the guided play activity described here. More child talk than adult talk has been associated with greater language gains in a variety of learning contexts such as book reading, play, and group discussion (Neuman & Dwyer 2009; Hindman et al. 2019; Dickinson & Porche 2011; Newman 2019; Levy et al. 1992). It is possible that, initial direction and structure provided by adults may be necessary for children to learn the foundational skills and strategies for narrative production, but that this support can, and should, be withdrawn over time to allow children to create and practice narratives with increasing independence. More investigation is required to understand how to best transform narrative play from heavily scaffolded exercise to a child-led activity.

Finally, in guided play, vocabulary instruction was connected to play actions and words were explicitly defined, but this was not necessarily embedded in the play sequence or part of a

narrative thread. Rather, vocabulary prompts connected words to real world knowledge and general experiences. By contrast, vocabulary instruction in DP, was embedded in the narrative context and connected to a variety of concepts – to an explicit definition, to several narrative concepts, and to children's enactments. In this condition, vocabulary instruction and narrative direction worked together to deepen word knowledge and narrative comprehension simultaneously. The findings from the mediation analysis indicated that this combination was particularly effective for narrative production. These findings from the play sessions present some valuable insights into the support strategies and play experiences that can bolster children's narrative skills.

The Relationship Between Narrative Play Experiences and NIA-P Productions

The results from the previous questions revealed some important relationships: First, children in directed play told significantly more detailed stories than those in free play, and second, vocabulary was a significant mechanism that helped children to tell better narratives. It is likely that more than one factor contributed to children's narrative understanding in the DP condition. The play analysis revealed several distinguishing features about this condition, and therefore, it stands to reason that one or more of these may have influenced children's NIA-P outcomes. One of the most noticeable features of DP play was the total number of story-related events provided. We were able to investigate whether the amount of story exposure in directed play was predictive of children's narrative production. The results showed no relationship between the total number of narrative units and children's NIA-P scores, nor was there any relationship between individual narrative features and children's NIA-P productions. Thus, the directed play condition was not effective due to greater exposure to the narrative units.

Bearing in mind that the DP playgroups inhabited a story-like world that mirrored the book, it is likely that other aspects of narrative and language, that were so prominent in the DP approach, played a crucial role in children's narrative understanding. Examples of DP narrative features that may have influenced children's narrative productions are, a more developed plot structure, an emphasis on the relationships between story episodes, story completeness, or extensive adult modelling. Unfortunately, this study did not include measures that quantified these features and further investigation is needed to examine this. Additionally, consideration must also be given to the nature of conversations in the play methods. The results here have shown that vocabulary played a significant role in the directed play condition, and the exploratory analysis reported useful insights into the play experiences and word learning practices in adult guided play activities. Given that narrative is not an isolated construct, but rather a collection of interconnected skills, it is possible that other features of talk played a role in supporting narrative learning (Cain et al. 2004; Rapp et al. 2007; Paris & Paris 2003; Dickinson et al. 2019; Dickinson et al. 2019). For example, in DP adult talk was scripted and questions, comments, responses and prompts were carefully crafted, thus it is possible that adult narrative commentary was more complex or complete than seen in guided play. Further investigation of these language differences is required.

CHAPTER VI

LIMITATIONS, IMPLICATIONS, AND CONCLUSION

Limitations

This study adds to the body of literature by identifying aspects of adult play support that positively influence preschooler's narrative proficiency, however there are some limitations to consider. This is one of the first studies to analyze adult and child participation in different play support conditions and the findings here suggest that preschoolers require considerable guidance, structure, and repetitions during play to make the necessary narrative connections; however, the benefits of narrative enactment versus narrative play may have differential effects for children of different ages, children with different play skills, and children with varying language aptitudes. Hakkarainen et al. (2013) found that adult guided techniques are more successful with children who are experienced with play narratives, than those who are not. In addition, preschoolers are likely to need varying guidance and supports for different aspects of narrative play. The findings from this study showed that these preschoolers were adept at using the toys to enact the physical action items of a narrative thread, but less proficient with the conceptual resolution features and needed considerable support with these. In a similar vein, Marley et al. (2011) found that younger children (first grade) required physical toy manipulation to facilitate story comprehension while older children (third grade) were able to simply imagine the same events. It is possible that younger children, children with less play experience, and children with lower-language levels may benefit from more coordinated approaches which provide them with the necessary structures and models to learn from; while guided play methods, which provide less structure and direction, may be more

appropriate for older, more competent, or more linguistically proficient players. This study did not examine these distinctions and more research is needed to understand how to differentiate play support to accommodate learners' instructional needs.

A second limitation of this study is the narrow focus on narrative reproduction as a measure for narrative proficiency. Narrative competence incorporates a vast array of skills, and covers many more genres and forms than covered here. Various narrative constructs, such as, reproducing, comprehending, interpreting, and composing own narratives are likely to draw on divergent skills that were not considered in this intervention. Moreover, narratives vary considerably across cultures and how this influences individual children's classroom narrative and play performance needs to be better understood. Children enter preschool with a variety of academic and cultural knowledge, and classroom future interventions need to find ways to draw upon and leverage these skills and experiences.

The coding rubric used for the play sessions had several limitations. First, coding focused on adult and child *narrative* commentary and participation. The coding system used here, did not accommodate for play episodes that were not directly related to the intervention books, and therefore important information regarding children's personal play scripts and narratives were not considered. For example, characters cooking and/or going to sleep in the house or castle were recurring play sequences in guided and free play. For the dragon theme, the cooking event was part the story's resolution and was therefore included in the coding. But this was not a narrative episode in the Farmer Duck story and consequently was not included as a play episode in the Farm theme play sessions. Similarly, putting characters to bed was part of the Farm story concepts and included in the codes, however it was not part of the Dragon narrative. Secondly, play events were coded as discrete utterances and behaviors, and did not

consider these in the larger "story framework" that the play scene may, or may not, have followed. For example, in the dragon theme, if children played a restaurant scene, these interactions would have been coded as resolution events regardless of whether or it was enacted as a concluding event to a play narrative, or enacted an isolated play activity.

Finally, this analysis focused on the number and type of narrative activities in play session. This is only one of many methods available to examine interaction and discourse patterns. Other approaches might investigate the relationships between participants' utterances and behaviors, analyze turn-taking, or investigate IRF (initiation, response, and feedback) patterns between children and adults. Reframing the play sessions through such lenses will undoubtedly provide further interesting insights into the support methods implemented here.

Implications for the Field

A core finding from this study is the role that story-specific vocabulary learning plays in narrative development. These results indicate that vocabulary instruction embedded in narrative play is a crucial ingredient for bolstering learning. Dickinson et al. (2019) have demonstrated that language constructs such vocabulary and narrative are closely related and the findings from this study lend further support to this notion by showing that vocabulary instruction and narrative enactment are interconnected and are most beneficial when learned simultaneously. Furthermore, the findings from the play exploration reveal that vocabulary instruction can take on different forms in different play contexts and that this might impact both word and narrative learning.

Second, this study added a new understanding of adult support play strategies to the existing research base. Earlier studies compared undefined adult support strategies with no-support

strategies. Adult support methods were broadly and/or vaguely defined; and they typically controlled for the amount of adult talk rather than the type of guidance provided. This study refined this comparison and looked at two different adult support methods—directed and guided. Similar to other narrative intervention studies, our findings showed that narrative production scores from children in the directed play condition were significantly higher than those from children in independent play. It's worth noting that the play support strategies implemented in other interventions, mostly involved structured story enactments and therefore were likely to be dominated by adult direction, commentary and narration, similar to the DP condition tested here (Dansky 1980b; Pellegrini & Galda 1982; Baumer et al. 2005). On the other hand, NIA-P scores from children in adult guided play were not significantly different to those in free play. This guided play strategy was more akin to natural children's play, and not a story enactment, and this may account for the divergence between the guided play findings presented here and the findings from other intervention studies. Several studies have shown that guided strategies, like those used in GP, are greatly beneficial for overall language development, including narrative, for children with higher language skills and/or expert players (Newman 2019; Marley et al. 2011; Hakkarainen & Bredikyte 2014; Hakkarainen et al. 2013; Nielsen & Friesen 2012). Similarly, other research suggests that children with less narrative experience or lower language proficiency benefit from a more structured and directed approach (Hakkarainen & Bredikyte 2014; Nielsen & Friesen 2012; Gillam & Pearson 2017). The results presented here demonstrate the importance of investigating the nuances of adult support strategies and how these influence children's learning in different contexts and for different purposes.

Implications for Educators

The central implication of these findings for teachers is that, when using play as an instructional method in classrooms, these activities need to encompass play, story, and word learning for optimal impact. Additionally, adult guidance is required to ensure that these learning opportunities are interconnected. There are some important considerations to bear in mind when implementing directed and/or guided play.

The directed play method presented several advantages for narrative learning, most notably that that children participated in a complete and structured story enactment where connections between narrative events and concepts were made explicit. Moreover, explicit vocabulary instruction was integrated to be part of the narrative experience and played an important role in helping children comprehend the narrative at hand. Another factor to consider is that less vocal, less confident, and/or less proficient storytellers were able to participate actively through non-verbal enactments. Consequently, this approach may be more beneficial for learners with limited story experience or those who are grappling with comprehension. A distinct disadvantage of this approach is that children had fewer opportunities to 'own' the narrative experience or explore their own narrative ideas.

In GP, children were given greater ownership of the play activity, and encouraged to share and explore their story ideas. In this way there are likely to be more opportunities for children practice crucial language and vocabulary skills, as well as more opportunities for adult-child conversational strategies that are known to be beneficial for example, asking open questions, providing positive feedback, or clarifying misunderstandings. Some notable drawbacks of this approach are that less competent learners can get lost without guidance and structure, which could possibly create or compound misunderstandings. Secondly, these play sessions can become

fragmented as children pursue different enactments rather than collaborating to create a single narrative play; this in turn, can become difficult for teachers to manage. Taken as a whole, the key take-away for teachers is the importance of adult supported play combined with story-specific vocabulary instruction to bolster narrative learning.

Conclusions

Narrative play activities in preschool classrooms can provide many narrative learning opportunities, and, when combined with efforts to teach vocabulary, may be particularly effective at fostering these of language competences simultaneously. The positive association between adult supported play and narrative proficiency emphasizes the importance of modeling narrative production, engaging children in story enactments, and using and teaching novel vocabulary while doing so. While several studies have shown the relative benefits of play for narrative development, less is known about how adults need to guide and structure these activities. Examining roles, contributions, and features of the adult-child play conditions presented here have provided insight into the mechanisms and strategies that drive narrative growth. Taken together the findings indicate that play activities are most helpful when adults invite children to participate in a pretend story realm where narrative ideas and language are explicitly connected. More broadly, much attention has been given to promoting language-rich preschool environments (Hindman et al. 2019; Farran et al. 2017; Justice et al. 2018; Newman 2019; Dickinson & Porche 2011), and the findings presented here are important for understanding how educators can implement adult supported play as one approach to fostering narrative competence.

Narrative Outline and Vocabulary List by Theme and Book

The Knight and The Dragon

Event Type	Narrative thread	Vocabulary
Orientations:	There was a knight in a castle and a dragon in a cave, and they were **enemies**. There was **intelligent** princess in the castle library.	enemies intelligent
Rising actions:	One day, the knight and the dragon saw one another and decided to fight. But first the knight and the dragon had to learn about fighting. The knight went to the castle library and asked the princess for books on dragon-fighting. The knight put all of his weapons together. He sharpened is sword and gathered his armor and shield to protect him during the fight. The dragon **rummaged** through his things, and found some books about knight-fighting. The dragon looked at his **reflection** in the mirror and practiced making **fierce** faces. He sharpened his talons and prepared for the fight. The dragon's **scales** will protect him the fight.	rummaged reflection fierce scales
Climax:	The knight and the dragon met for the fight. The knight's horse galloped toward the dragon, and the dragon ran toward the knight, but…they missed. The knight and the dragon kept **charging** at one another, but every time they attacked one another they missed. The knight flew into a tree. The dragon flew into a lake and **accidentally** set some trees on fire.	charging accidentally
Resolution:	The princess was in the castle and watched the knight and dragon fighting **below**. She didn't think the knight and the dragon should fight. She went to her library to look for some books that would help them get along. She went to the knight and dragon and gave each of them books that taught them how to cook and how to build a barbeque. Then the knight and the dragon opened a restaurant together. The dragon cooked the hamburgers by exhaling fire from his **nostrils**. The knight served the food. The knight and the dragon are enjoying cooking together, and thanks to the princess, they were no longer **enemies.**	below enemies nostrils

Farmer Duck

Event Type	Narrative thread	Vocabulary
Orientations:	Once there was a duck who lived on a farm with a lazy farmer. The farmer never did any work and stayed in bed all the time.	
Rising actions:	The poor duck did all the work around the farm. He **fetched** the cow. He carried the sheep into the barn. The duck **wearily** carried hens to their house "How goes the work?" the farmer asked. The duck said, "Quack!" The farmer got really fat by staying in bed all day and not doing any work The duck dug up all the **weeds**. Next, climbed the **rungs** of the ladder and picked some apples for the farmer. He scrubbed all the dirty dishes, then he ironed the wrinkled clothes and folded them neatly. The duck carried the **weighty** basket of eggs to the house for the lazy farmer. Soon the duck was so tired, he sat down on the floor and started crying. All the animals felt so sorry for the duck who had to work all the time.	fetched weighty wearily weeds rungs
Climax:	They got together in the barn and made a plan for the morning. At **dawn**, the cow, the sheep and the hen quietly snuck into the farmhouse. They quietly tiptoed upstairs and squeezed under the farmer's bed and starting rocking it. They lifted the bed **over** their heads and tipped the farmer out. The farmer woke up and started screaming. He didn't know what was going on! The farmer was so scared that he **fled**. He ran down the lane, across the fields, **over** the hill.	dawn over fled
Resolution:	Later that morning went to the yard. He was surprised, because he didn't hear the farmer say "How goes the work?" All the animals came back and told the duck the whole story about the farmer running away! The farm was now theirs and all worked on together. The lazy farmer never **returned**!	returned

Appendix B

Examples of Vocabulary Testing Items
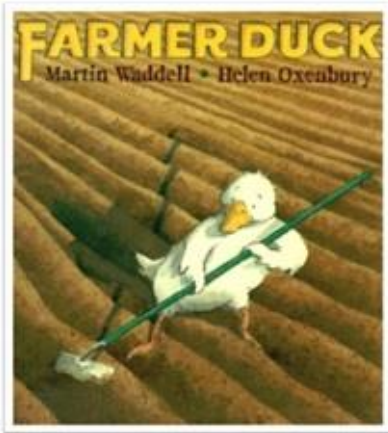
Scales

rummaging

Shovel

weeping

Appendix C

Narrative Information Assessment (NIA-P) booklets
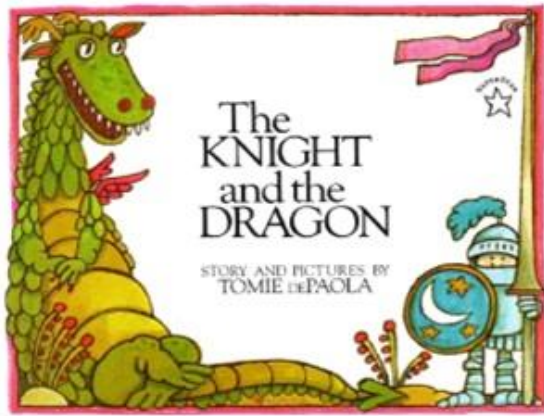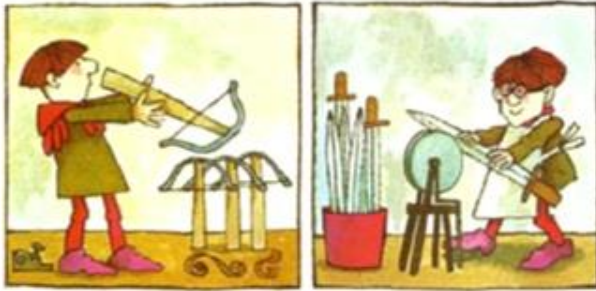
(a) Farmer Duck

6

7

8

9

10

11

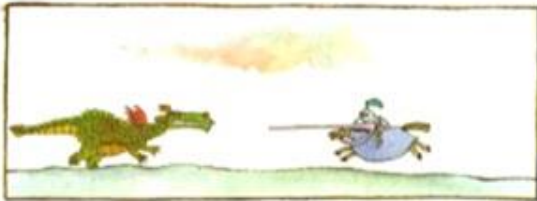(b) Knight and Dragon

Narrative Information Assessment Scoring Rubrics

Farmer Duck Scoring Rubric
Starting Prompt: There once was a..

Page	Main Events/Action	Elaborations
p1	Farmer Duck Sleeping/in bed Stayed in bed all day/didn't do any work	(Duck) did all the work (Farmer) Lazy
p2	Fetch/Bring/get cow	From the/in the rain From the field To the barn/farm
p3	Dig/pull/take out weeds/plants	With a shovel Out of the dirt
p4	Pick/get apples	Climb ladder/rungs
p5	Crying/weeping/sad Tired	Because he is doing all the work The farmer stays in bed Farmer does no work Farmer/nobody helps
p6	Talk/have a meeting Make/have a plan Come up with/have an idea	To help To get rid of/chase away farmer In the barn At night Because Farmer Duck was sad/working hard They didn't want Duck to be sad Plan to push farmer out of bed/chase farmer away For the morning
p7	Push/bounce/tip/rock bed Push Farmer out Wake farmer up Frighten farmer	At dawn Sneak/creep/tip-toe in Under the bed
p8	Chase/Run away/fled Kick the Farmer out	Over the hill Down the lane/road/hill Across the field Far away Farmer never returned

Page	Main Event/Action	Elaborations
p9	Chase/run away/fled Kick the Farmer out	Over the hill Down the lane/road/hill Across the field Far away Farmer never returned
p10	Work/help/together	Farm belongs to animals Farmer Duck is happy now Farmer is gone forever

Prompts: What happened here?/What is happening here?/And then

Knight And Dragon Scoring Rubric
Starting Prompt: There once was a..

Page	Main Event/Action	Elaborations
p1	Knight Dragon Castle Cave	Enemies Intension/decision/desire to fight
p2	Library Read books Get ready/prepare	Ask Princess for books/help Princess help/find/give (books) About fighting/dragons
p3	Read books Get ready/prepare	Rummage/look/search/find About fighting/dragons
p4	Make/build Armor/suit/helmet/costume Get dressed/ready	To fight/for fighting To protect/keep safe
p5	Fierce/mad/angry/scary Practice/Get ready Making faces	To fight/for fighting To scare/frighten knight
p6	Weapons/sword/shield/bow & arrow Sharpen/get ready/prepare	To fight/for fighting For practicing
p7	Practicing/learning Charge/fight *(any description of charging e.g. run/go towards each other)*	Not very good Get better Getting ready to fight
p8	Battle/fight/charge (any description of charging e.g. run/go towards each other)	Battle/fight began/started Want to/try to fight They missed/went/ran past each other
p9	Dragon in the water/pond Dragon burn trees Knight in tree Didn't fight	They missed/went/ran past each other Accidentally/by mistake

p10	Cook/barbeque/make/serve food Read books	Idea/had an idea Princess arrived at the fight Be friends Work together Help them
p11	Cook/barbeque/make/serve food Restaurant	Become friends Work together Not enemies/fighting anymore

Prompts: What happened here? /What is happening here? /And then….

Appendix E

Play Video Sampling

Language Specialist	Directed Play				Guided Play				Free Play		
	1	2	3	4	1	2	3	4	1	2	3
Dragon Theme											
LS1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LS2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LS3	M	✓	✓	✓	✓	✓	✓	✓	S	S	S
LS4	✓	✓	✓	✓	✓	✓	✓	✓	S	S	S
Farm Theme											
LS5	M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LS6	✓	✓	✓	M	✓	✓	✓	✓	S	S	S
LS7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LS8	✓	✓	✓	✓	✓	✓	✓	✓	S	S	S

S = Substituted video
M = Missing video, not substituted

Play Coding Manual

Verbal utterances are defined as any statement, prompt, or question that matches the descriptors provided.
e.g. Descriptor: "prepare for the fight"
Statement = "I am getting ready to fight you"
Prompt = "Get your dragon ready to fight"
Question = "Are you ready to fight?"

Knight and Dragon Verbal Descriptors

ORIENTATIONS

Characters *	Settings **
dragon	castle
knight	cave
princess	library

* Each character item is coded once.
** Each location item is coded once.

RISING ACTION - PREPARING

General Preparation	Knight Prepares for Fight	Dragon Prepares for Fight
look for/give/read books	put helmet on	make angry eyes
get ready for the fight	clean weapons	swish tail
not ready yet	paint shield	scare the knight
learn to fight	put armor on	show teeth
	sharpened sword	practice exhaling fire out of his nose
	prepare weapons	practice making fierce/scary faces
	make/put on a suit	look fierce or be scary or scary face
		showing or 'scratching' talons

Children engage with the play books regularly and talk about them extensively. Book talk is only coded when participants talk about or enact characters giving, finding, or reading books or the books are linked to learning how to fight or build a BBQ.

CLIMAX - FIGHTING

Intend to Fight	Fight and Miss
decided to fight	knight went into a tree
I want to fight you	dragon went into a lake/pond
they should fight	run past each other
are you going to fight me?	miss each other
do you want to fight?	charge at each other
they fight a lot	let's fight!
we are going to fight	not very good at fighting
they are enemies	dragon breaths fire (to fight)
not friends	run toward one another very fast
not getting along	meet for the fight
don't like each other	attack one another

Fighting is a common behavior in the play scenes and can be coded as either "preparing for the fight" or "fight and miss". The characters do not necessarily have to be knights and dragons fighting each other; any characters fighting are valid entries. Typically, any character that is fighting alone can be coded as practicing (i.e. "preparing for the fight") while any 2 characters engaged in fight behaviors and be coded as "fight and miss".

RESOLUTION - GET ALONG

Become Friends	Start A Restaurant
want to get along	restaurant
want to be friends	BBQ
become friends	eat barbeque/food/hamburgers
do something together	cook/make food
don't think they should fight	BBQ related food
help them get along/be friends	build a barbeque

(books) about being friends	start/open a restaurant
not fighting anymore	serve food
be nice/kind to each other	lunch/dinner
not going to fight	dragon breaths fire (to cook)
shouldn't fight	knight serves food
no longer enemies	
stop fighting!	
(cooking) together now	

Farmer Duck Verbal Descriptors

ORIENTATIONS

Characters *	Settings **
farmer/man	farm/yard/field
duck/Farmer Duck	house
animals	bed
	barn

* Each character item is coded once.
** Each setting item is coded once.

RISING ACTION - WORKING

Farmer Is Lazy	Animals Make A Plan*	Duck Works**
doesn't do any work	upset with farmer	does all the work
lie in bed all day	didn't like/want duck to be sad	take animal to barn
snoring	have a meeting	put animal to bed/away
eat candy	make a plan	cut the wood
says "how goes the work?"	talking about what they	dig the weeds
lazy	are going to do	wash the dishes
		iron the clothes
		pick the apples
		collect the eggs
		Duck tired
		Duck crying

* All FUTURE tense references to "chasing" the farmer is valid e.g. We must chase the farmer away.

CLIMAX - CHASE FARMER AWAY

Wake the Farmer	**Farmer Runs Away**
animals go in the house	farmer runs away
animals climb the stairs	animals chase the farmer
push the farmer	farmer running (away)
push the bed	farmer leaves
pick up/throw the bed	catch farmer
give the farmer a fright	
shout/bang/make a loud noise	
frighten the farmer	
wake the farmer	

** *All PRESENT tense references to "chasing" the farmer is valid e.g. I am chasing you away*

RESOLUTION - FARM BELONGS TO THE ANIMALS

Animals Work Together	**Farmer is Gone ***
animals tell the story	farmer has left/gone
animals work together	farmer never returns
animals help	nobody in the bed
farm belongs to the animals	nobody saying, "how goes the work?"
animals are happy now	
duck is happy now	

** *All PAST tense references to "chasing" the farmer is valid e.g. chased the farmer off the farm*

Non-Verbal utterances are defined as behaviors that are provided in response to a story-related statement, prompt, or question from an adult or child.

1) Appropriate non-verbal behaviors or actions (e.g. puts helmet & sword on knight when adult discusses preparing for the fight, Adults asks, knight are you ready? Child responds by nodding)

2) Appropriate simple or one-word answers *(e.g. yes, no, I don't know, wow!)*

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3)   Appropriate sounds or monosyllabic responses *(e.g. mmm, uh-uh, aargh, crying sounds)*

Each time there is a verbal story event followed by an appropriate action or response from a child, that would not otherwise qualify in the verbal utterance guide, it is assigned a non-verbal code.

If two children are performing different story behaviors/talk at the same time then both are coded, even if they are the same (e.g. getting dragon ready for the fight and getting knight ready for the fight at the same time)

Appendix G

Pearson's Zero Order Correlations for Independent Variables, Dependent Variables and Covariates

	Theme	Age	Attendance	Vocabulary - Pre	Vocabulary - Post
Age at Pre-test	-0.124				
Attendance	0.104	0.102			
Vocabulary - Pre	0.034	0.169*	0.164*		
Vocabulary - Post	0.028	0.091	0.189*	0.559**	
Narrative Score	-0.151	0.026	-0.088	0.400**	0.588**

Notes:
* p< 0.05 level (2-tailed).
** p< 0.01 level (2-tailed).
Dragon Theme = 0 Farm Theme = 1

Appendix H

Pearson's Zero Order Correlations for Narrative Play Variables and Covariates

	Adult Orientations	Adult Rising Act	Adult Climaxes	Adult Resolutions	Child Orientations	Child Rising Act	Child Climaxes	Child Resolutions	Child Non-Verbal
Adult Orientations	1								
Adult Rising Act	0.820**	1							
Adult Climaxes	0.719**	0.834**	1						
Adult Resolutions	0.669**	0.840**	0.830**	1					
Child Orientations	0.147	0.040	-0.101	0.022	1				
Child Rising Act	0.007	0.025	0.098	0.035	-0.263*	1			
Child Climaxes	-0.041	-0.094	0.156	-0.029	-0.229*	0.324**	1		
Child Resolutions	0.202	0.259*	0.366**	0.240*	-0.005	0.189	0.210*	1	
Child Non-Verbal	0.674**	0.876**	0.686**	0.617**	0.005	-0.007	-0.184	0.213*	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Pearson's Zero Order Correlations for Play Event-Type Scores and NIA-P Scores

Orientations	NIA-P Total Score	NIA-P Orientations	Adult Orientations	Child Orientations	Child Non-Verbal
NIA-P Total Score	1				
NIA-P Orientations	0.394[**]	1			
Adult Orientations	0.130	0.184	1		
Child Orientations	-0.082	0.036	0.472[**]	1	
Child Non-Verbal	0.131	0.266[*]	0.700[**]	0.214	1
Rising Actions	NIA-P Total Score	NIA-P Rising Actions	Adult Rising Actions	Child Rising Actions	Child Non-Verbal
NIA-P Total Score	1				
NIA-P Rising Actions	0.908[**]	1			
Adult Rising Actions	0.155	0.098	1		
Child Rising Actions	0.054	0.117	0.271[*]	1	
Child Non-Verbal	0.131	0.090	0.895[**]	0.233[*]	1
Climaxes	NIA-P Total Score	NIA-P Climaxes	Adult Climaxes	Child Climaxes	Child Non-Verbal
NIA-P Total Score	1				
NIA-P Climaxes	0.303[**]	1			
Adult Climaxes	0.191	0.015	1		
Child Climaxes	0.070	-0.355[**]	0.295[*]	1	
Child Non-Verbal	0.131	0.238[*]	0.744[**]	-0.087	1
Resolutions	NIA-P Total Score	NIA-P Resolutions	Adult Resolutions	Child Resolutions	Child Non-Verbal
NIA-P Total Score	1				
NIA-P Resolutions	0.651[**]	1			
Adult Resolutions	0.169	0.210	1		
Child Resolutions	0.266[*]	0.348[**]	0.281[*]	1	
Child Non-Verbal	0.131	-0.094	0.644[**]	0.323[**]	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

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