TEACHERS’ COGNITIVE DEMANDS AND PRESCHOOL STUDENTS’ USE OF THINKING STRATEGIES DURING INTERACTIVE BOOK READING

A DISSERTATION

SUBMITTED TO THE GRADUATE SCHOOL

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE DOCTOR OF EDUCATION

BY

KELLI M. SERVIZZI

DISSERTATION ADVISOR: DR. PATRICIA CLARK

BALL STATE UNIVERSITY

MUNCIE, INDIANA

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MUNCIE, INDIANA
MAY 2013
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ABSTRACT

The study examined preschool students’ use of thinking strategies when responding to deep structure questions during interactive book readings. The children were enrolled in two different inclusive preschool classrooms in a large Midwestern city. The study explored which thinking strategies the preschool children used when answering deep structure questions. Also under investigation was the potential difference in usage of thinking strategies between general education and special education students. Data collected included observations and frequency tallies. Information gathered was analyzed using independent sample T-Tests. The classrooms were combined to generate a larger population.

Analysis showed the preschool students in the two inclusive preschool classrooms used all seven thinking strategies during interactive book read alouds. Frequency counts revealed a higher mean usage of schema, making inferences, and determining importance. Further, these strategies were as likely to be used by a general education student as a special education student. Based on the results of the study, teachers should guide and instruct their students about stories within discussions. Teachers should also select engaging texts guided by student interest, student background, or classroom

project. This will allow them to build on information that students have and also create learning opportunities in the classroom that affects the classroom community.
CHAPTER 1

Introduction

In *Choice Words*, Johnston (2004, pp. 1) said, “language is valuable enough to play with, powerful enough to change behavior without force.” Teachers play a valuable role in mediating children’s activities and language. “The teacher has to make something of what children say and do. She makes sense for herself and offers a meaning for her students. She imputes intentions and offers possible worlds, positions, and identities” (Johnson, 2004, pp. 5). It is with knowledge and acceptance of this responsibility that teachers must be aware of the levels of language in their classrooms and the effects on the children. Beginning in preschool, the cognitive demands teachers place on their students are often the first steps in comprehension that will impact future academic success.

Children’s language skills prior to school entry are highly predictive of later academic achievement; and as Connor, Morrison, and Petrella (2004) demonstrated, continue to be influential through at least third grade. This result lends support to the importance of preschool language experiences that promote reading comprehension. Language comprehension and expression are developmental milestones in early
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childhood; and by 3- to 5-years-old, children begin to turn the conversation over to one another (Berk, 2006).

Well-developed language helps children interact with peers and adults, and language accomplishments in preschool are an important foundation for later achievements in reading, particularly comprehension (Danis, Bernard, & Leproux, 2000; McKeown & Beck, 2006; Mashburn, Justice, Downer, & Pianta, 2009; Zucker, Justice, Piasta, & Kaderavek, 2010). One time for interaction is interactive book reading in which teachers use open-ended questions, expand children’s utterances, and provide positive feedback. Studies on interactive book reading have shown the positive impact on language and literacy development of low-income two to four year olds (Holdaway, 1979; Moschovaki, Meadows, & Pellegrini, 2007). Additionally, Morrow (1990) found story readings in small groups increased the comprehension and the number of complex questions and comments made by children. While interactive read alouds can occur in a number of settings, preschool is an ideal time for diagnostic work and intervention for at-risk students (Dufva, Niemi, & Voeten, 2001; Justice, Pence, Beckman, Skibble, & Wiggins, 2005). Students may be labeled at risk if they are academically disadvantaged, disabled, or characterized by low socioeconomic status.

In its report (2000), the National Reading Panel noted comprehension is an active process that requires an intentional, thoughtful interaction between the reader and the text, and the preparation of teachers to better equip students to develop and apply reading comprehension strategies to enhance understanding is intimately linked to students’ achievement in this area. Comprehension is “intentional thinking during which meaning is constructed through interactions between text and reader” (NRP, 2000, pp. 14).
Meaning is constructed through “intentional, problem solving thinking processes, and comprehension is enhanced when readers actively relate the ideas represented in print to their own knowledge and experiences and construct mental representations in memory” (NRP, 2000, pp. 14).

The NRP (2000) also concluded comprehension strategies may be acquired informally to some extent, but explicit or formal instruction in their application has been shown to be highly effective in enhancing understanding. This is particularly true for young children who are quite limited in their knowledge and cognition about metacognition and do relatively little monitoring of their own memory or comprehension (Flavell, 1979). When adults explicitly mediate, they help children internalize and understand specific features and functions of print (Justice & Sofka, 2010). This characterizes the approach of Transactional Strategy Instruction that promotes explicit instruction, but also emphasizes the ability of the teachers to facilitate student discussions in which children collaborate to form joint interpretations of text and acquire a deeper understanding of the mental and cognitive processes involved in comprehension. At the core of the Sociocognitive Model is the assumption that constructing understanding through talk and extending stretches of discourse that convey novel information explicitly advance comprehension (Dickinson & Smith, 1994). These surface structure versus deep structure question-answer interactions were the basis for this study. Deep structure interactions between teachers and children include: constructing meaning at the whole-text level, determining importance, creating mental images, relating the new to the known (schema), questioning, and inferring (Keene, 2008).
In the 1970s and early 1980s, individual comprehension strategies were encouraged before, during, and after reading. However, in 1978, Dolores Durkin completed a seminal investigation on reading comprehension instruction among 40 intermediate grade teachers, and it was found that fewer than 50 of the 17,997 minutes contained comprehension instruction. The two most common teacher behaviors were assessment (17.65%) and helping with worksheets (14.35%). The most common student behaviors were completing written comprehension assignments (9%), responding to assessment probes in writing (6%), and listening to others answer questions (3%). Student application of comprehension skills through discussion was not observed (Durkin, 1978). Ideally, application would follow some explicit instruction and involve a teacher guiding students to complete an example of an exercise for a given skill.

The importance of thoughtful interactions with texts, other students, and the teacher has been shown to be important for the comprehension growth of all learners. This study built upon prior investigations to include a targeted look at preschool children and their use of thinking strategies when responding to deep structure questions asked during interactive read alouds. Holdaway (1979) described anecdotes of young children’s gradual growth in self-correction, confirmation, and prediction while they pretend-read storybooks. Although these factors could be considered early evidence of metacognition, Holdaway did not call them so (Holdaway, 1979; Cox, 1994). The use of thinking strategies by general education and special education preschool children to increase their comprehension during interactive book reading is something not yet explored.
Thinking strategies during interactive book reading

Purpose

The purpose of this study was to investigate children’s use of thinking strategies in inclusive preschool classrooms during whole group interactive reading time as it related to their responses to deep structure questions. Further, this study investigated the use of thinking strategies among the general education and special education populations in the classroom.

Guiding Questions

1. Which thinking strategies do preschool students use when they respond to deep structure questions?

2. Do general education students and special education students use different thinking strategies when responding to deep structure questions?

Definition of Terms

- Comprehension – intentional thinking during which meaning is constructed through interactions between text and reader (NRP, 2000, pp. 14)

- Decontextualized talk – talk grounded in the language used and includes giving directions, explaining a process, telling a story, and describing a place or object (Gest, Holland-Coviello, Welsh, Eicher-Catt, & Gill, 2006)

- Deep structure systems - skills and strategies that help readers and writers comprehend the plot, probe deeply, and apply understanding (Keene, 2008). Referred to as macrolevel by Kintsch (1980).

- Interactive read alouds – modeling fluent oral reading while using an animated tone and expression and stopping periodically to thoughtfully
question students to focus them on specifics of the text (Fisher, Flood, Lapp, & Frey, 2004)

- Levels of Abstraction – language analysis based on four levels with the demands on the speaker increasing as the levels increase (Blank, Rose, & Berlin, 1978)

- Listening comprehension – the ability to comprehend spoken language (Glossary of Education)

- Metacognition - the process of active control over one’s cognition to accomplish a task or solve a problem (Flavell, 1978)

- Scaffolding – A teaching strategy in which the teacher provides individualized support to facilitate the student's development. With the help of the teacher, the student will be able to gain new skills and build on prior knowledge (Glossary of Education).

- Sociocognitive Model – reading as a meaning-construction process between the reader, the text, and the teacher in the context of the classroom (Ruddell & Unrau, 2004)

- Surface structure systems - skills that help readers and writers identify words and read fluently (Keene, 2008). Referred to as microlevel by Kintsch (1980).

- Thinking strategy – comprehension strategies that allow children to think with deeper understanding (Keene & Zimmerman, 2007)

- Transactional Strategy Instruction – promotes explicit instruction but also emphasizes the ability of the teachers to facilitate student discussions in which children collaborate to form joint interpretations of text and acquire a deeper
understanding of the mental and cognitive processes involved in comprehension (Rosenblatt, 2004)

**Significance**

Beginning in preschool, the cognitive demands teachers place on their students are often the first steps in comprehension that will impact future academic success. Children’s language skills prior to school entry are highly predictive of later academic achievement, particularly in comprehension, and continue to be influential through at least third grade (Connor, Morrison, & Petrella, 2004; Mashburn, Justice, Downer, & Pianta, 2009). The interactions between children and adults in preschool classrooms are critical when building comprehension (Morrow, 1990; Danis, Bernard, & Leproux, 2000; McKeown & Beck, 2006; Moschovaki, Meadows, & Pellegrini, 2007; Zucker, Justice, Piasta, & Kaderavek, 2010). Therefore, early childhood is an ideal time for diagnostic work and intervention for at-risk students (Dufva, et al., 2001; Justice, et al., 2005).

Comprehension strategies may be acquired informally to some extent, but explicit or formal instruction in their application has been shown to be highly effective in enhancing understanding (NRP, 2000), as young children are quite limited in their knowledge and cognition about metacognition and do relatively little monitoring of their own memory or comprehension (Flavell, 1979). When adults explicitly mediate, they help children internalize and understand specific features and functions of print (Justice & Sofka, 2010). In addition to explicit instruction, teachers must also facilitate student discussions in which children collaborate to form joint interpretations of text and acquire a deeper understanding of the mental and cognitive processes involved in comprehension. Vygotsky’s cognitive development theory (1978) links speaking and thinking through the
regulatory function of language and internalization of others’ speech. Language can express inner cognitive processes through “inner speech” - speech embodied in thought (Feng & Cox, 1999). Thus, metacognition may be observed in children’s speech as they engage in challenging activities, such as deep structure questioning.

Marie Clay expanded upon the social constructive process of Vygotsky by suggesting teachers consider children as constructors of responses and knowledge. As a constructor, the child uses thinking, oral language, reading, and early writing to make sense of his world. “When a child becomes fast and fluent in reproducing the things he knows, we can understand how he can attend to new information, features that were not noticed before. When you can respond to earlier learning without much attention you are freed to notice new features and make links to other things you know. Learning to read and write is creating vast networks of links between known features of linguistic and real world events” (Clay, 1986, pp. 767).

As children express meanings in speech, in writing, and in constructing, they become more proficient learners. “To develop constructive processes and to make the child learner bold enough to use them, the teacher has to give the child opportunities to construct his own responses at least more than 50% of the time” (Clay, 1986, pp. 768).

**Limitations**

No research is without limitations. This study provided insight into the abilities of preschool students in two inclusive classrooms, but it did not reflect how preschool students in general might use thinking strategies during interactive read alouds.

The first limitation was the small student sample size. The participating school district had three community-based preschool classrooms. However, scheduling only
permitted for the participation of two afternoon classes. The potential number of child participants was 32; however, only 18 families consented to the study. The small student sample size impacted the number of general education and special education children in each group and the total number of thinking strategies used. Due to the small number, it was difficult to run statistical analysis on the collected data and determine a large effect size.

Participants were selected in a convenience sample, leaving some populations unrepresented. These populations include teachers and students in a general education preschool class or self-contained special education preschool class, male teachers, teachers without 4-year college degrees, teachers and students in suburban and rural settings, and students whose home language was something other than English. It is possible the results of the present study would have been different if different populations were represented.

Another limitation was time. The study took place over an eight-week period with one read aloud per week. A longer intervention or an intervention of the same length with more frequent readings would have allowed for additional teacher instruction and student practice. Additional instruction and practice might have led to the students using more thinking strategies during the read alouds.
CHAPTER 2

Literature Review

Theoretical Frameworks

Comprehension strategies may be acquired informally to some extent, but explicit or formal instruction in their application has been shown to be highly effective in enhancing understanding (NRP, 2000). When adults explicitly mediate, they help children internalize and understand specific features and functions of print (Justice & Sofka, 2010). The Transactional Model of Reading and Sociocognitive Model of Reading promote explicit instruction while considering the reader (student), text, and teacher, (Rosenblatt, 1938; Ruddell & Unrau, 2004) and guide the framework for this study.

Dynamic interactions between the reader (student) and text and the triad of the reader-text-teacher in forming a learning classroom community allows for comprehension to take place in inclusive preschool classrooms. These dynamic interactions are evidenced when teachers ask deep structure questions that lead students to use thinking strategies in crafting their responses. Through their responses, read alouds become tools for comprehension gains and building a learning community.
Thinking strategies during interactive book reading

Central to the theory of the Transactional Model is the reader’s process of engagement and involvement for composing his or her own “poem,” reader’s construction of text (Rosenblatt, 1938).

The reader (student) and author’s relationship is critical to the theory, as the reader responds and communicates what the text means to him or her. The reader brings to the book personality traits, memories of past events, present needs and preoccupations, a particular mood of the moment, and a particular physical condition. These and many other elements in a never-to-be-duplicated combination determine his or her response to the text (Rosenblatt, 1938, pp. 30-31).

The uniqueness of events is the focus of the Transactional Model – the meaning of text derives from a transaction between the text and the reader.

The reader and the text are two aspects of a dynamic situation. “The meaning does not reside ready-made ‘in’ the text or ‘in’ the reader but happens or comes into being during the transaction between reader and text” (Rosenblatt, 2004, pp. 1363). The transaction, in social settings, creates a linguistic event in which readers interpret meanings and experiences. In a classroom setting, literature instruction can take the place of two different modes of experience – efferent and aesthetic (Rosenblatt, 1978). When responding from the efferent stance, readers seek to acquire information or understand what a text is saying. When responding from the aesthetic stance, readers are utilizing their unique experiences and engagement with the text is primary. Although the reading experience falls along the efferent-aesthetic continuum, it is on the aesthetic half where readers pay attention to the ideas, situations, and scenes during the reading event.

Meaning is shaped and experienced during and after the reading (Rosenblatt, 2004). Instruction using worksheets and tests encourages the use of the efferent stance. Instruction that focuses on sharing interpretations, allowing for different interpretations in
a social context, encourages the aesthetic stance (Rosenblatt, 1938). Through the deep structure questions in the read aloud, the children will engage in a social event and gain in their aesthetic understanding. Their understanding will be visible through the use of thinking strategies and meaning making. Meaning construction is central to metacognition and comprehension. Deep structure questions are skills and strategies that help readers and writers comprehend the plot, probe deeply, and apply understanding. Keene (2008) believes the five tactics for teaching deep structure comprehension are thinking aloud, modeling, demonstrating, conferring, and informal interactions and sharing.

Like the Transactional Model, the Sociocognitive Model promotes metacognition between the reader, text, and teacher. The Sociocognitive Model provides a clear explanation of the role of the social experience, including the pivotal role of oral language. The assumption is “reading comprehension draws upon oral skills used for constructing and understanding extended stretches of discourse that convey novel information explicitly” (Dickinson & Smith, 1994, pp. 105). There are seven key assumptions to the model (see Table 1).
Table 1

<table>
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<tr>
<td>1. Readers – even beginning readers – are active theory builders.</td>
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<td>2. Language and reading performance are directly related to the reader’s environment.</td>
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<tr>
<td>3. The driving force behind language performance and reading growth is the reader’s need to obtain meaning.</td>
</tr>
<tr>
<td>4. Oral and written language development, which affect the thinking process, contribute directly to the development of reading ability.</td>
</tr>
<tr>
<td>5. Readers construct meanings not only of printed manuscripts but also of events, speech, and behaviors as they “read” gestures, images, symbols, signs, and signals that are embedded in a social and cultural environment.</td>
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<tr>
<td>6. Texts are constantly reinvented as readers construct different understandings for them in a hermeneutic circle. Meanings for texts are dynamic, not static, as individuals, texts, and contexts change and interact.</td>
</tr>
<tr>
<td>7. The role of the teacher is critical in negotiating and facilitating meaning construction in the text and social context of the classroom.</td>
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Classroom applications of the Sociocognitive Model include activating the reader’s prior beliefs and knowledge relative to the text for effective meaning construction; recognizing that meaning construction is a purposeful, interactive, and strategic process; and utilizing metacognitive strategies (Vygotsky, 1978; Ruddell & Unrau, 2004). Sharing authority in the meaning-negotiation process allows readers to validate their interpretations as a community rather than depending solely on the teacher, and engaging readers in understanding will increase the richness of interpretation within the classroom community. Also, instructional activities that foster comprehension, discussion, and inclusion build readers’ perceptions that they are part of a classroom community (Ruddell & Unrau, 2004). “Children’s responses to quality literature shows individual and collective zones of proximal development as young children listen carefully and think critically and deeply with other group members and push the group to
Thinking strategies during interactive book reading

According to constructivists, as children express meanings in speech, in writing, and in constructing meanings, they become more proficient learners. “To develop constructive processes and to make the child learner bold enough to use them, the teacher has to give the child opportunities to construct his/her own responses at least more than 50% of the time” (Clay, 1986, pp. 768). A child constructs his/her own experiences through scaffolded opportunities in a child-centered classroom. In this type of classroom, the teacher is a facilitator, and the children are active participants in constructing new knowledge. As the teacher facilitates discussion through deep structure questions that are more cognitively challenging, the children raise their levels of responses to meet the teacher’s level of abstraction (Blank, Rose, & Berlin, 1978). In order to respond deeply, children must use thinking strategies to make meaning for metacognition and comprehension.

Read alouds are a context for expressive language developed through interactions between the teacher and the child. In early childhood, language comprehension and expression are developmental milestones, and by three to five years old children begin to turn the conversation over to one another (Berk, 2006). Well-developed language helps children interact with peers and adults, and language accomplishments in preschool are an important foundation for later achievements in reading, particularly comprehension (Mashburn, Justice, Downer, & Pianta, 2009). Language accomplishments are often the result of cultural context and the role of adults, including teacher sensitivity and responsiveness and the nature of the relationship (Mashburn et al., 2009). Interactions
Thinking strategies during interactive book reading

between children and adults are critical when building comprehension (McKeown & Beck, 2006; Danis, Bernard, & Leproux, 2000; Zucker, Justice, Piasta, & Kaderavek, 2010).

**Preschool as an Early Intervention**

These language accomplishments and critical interactions often take place in a school setting, such as a preschool classroom. Preschool is an ideal time for diagnostic work and intervention for at-risk students (Dufva, et al., 2001; Justice, et al., 2005). Students may be labeled at risk if they are academically disadvantaged, disabled, or characterized by low socioeconomic status. The early intervention programs can be remedial or preventative in nature, meaning they can remediate existing developmental problems or prevent their occurrence. Whatever the purpose, early intervention programs can maximize child development.

Early identification and appropriate programming can lead a child to reach his/her highest potential (Karnes and Lee, 1978), and this includes benefits in academic achievement, behavior, educational progression and attainment, labor market success, and decreased delinquency and crime (Karoly, Kilburn, and Cannon, 2005). More specifically, early intervention services can improve developmental, social, and educational gains; reduce future costs of special education; reduce feelings of isolation, stress, and frustration; alleviate and reduce behaviors by using positive strategies; reduce retentions; and help children become independent adults (Fiester & Smith, 2010; Snow, Burns, & Griffin, 1998; Slavin, 1994). For adults, early intervention shows parents are more able to implement the child’s program at home and there is reduced stress, which
facilitates the health of the family. Both of these factors appear to play an important role in the success of the program with the child (Beckman-Bell, 1981).

There are common critical features found in successful early intervention programs. Features include the age of the child at the time of intervention, parent involvement, and the intensity and/or amount of structure of the program model. The earlier the intervention, the greater the developmental gains may be, and the likelihood of developing problems is reduced (Cooper, 1981). Also, highly structured environments are more effective (Shonkoff and Hauser-Cram, 1987). The structure includes: (a) clearly specified and frequently monitored child and family behavior objectives, (b) precisely procedures, and (c) regularly used assessment and progress data to modify instruction. In addition to structure, the intensity of the services and instruction that reflect the instructional needs of the child also increases effectiveness. Further, programs with better-trained caregivers appear to be more effective. In a center-based program, this often is a lead teacher with a college degree (Karoly, Kilburn & Cannon, 2005). Also in center-based programs, smaller child-to-staff ratios prove to be more beneficial.

In the post World War II era, developmental research focused on the examination of the deprivation of children in early childhood. Likewise, the public showed an increased interest in child rearing, development, and environmental influences. Over the next thirty years, studies on early childhood programs boomed as researchers sought to assess the conceptualization, design, implementation, and utility of interventions (Rossi and Freeman, 1993). However, the studies were plagued with difficulties in drawing conclusions and incompatibilities. Early researchers assumed effects would be immediate
and many did not plan for the measurement of long-term outcomes (Shadish, Cook, and Leviton, 1995). Further, many intervention programs did not allow for the randomization of participants and treatments required in experimental designs, and small sample sizes were often common (Weiss, 1992). The reporting of information was also questioned. More favorable results may have been published, some programs may not have had an evaluation component and lost funding prior to evaluation, and longitudinal results may not have been applicable to more recent practices (Lazar and Darlington, 1982).

Despite the criticisms, a number of model programs produced some of the most influential research on the effects of targeted early intervention. Targeted services are for those children at greatest risk for poor achievement, based on economic disadvantage, disabilities, or other special needs. Universal learning programs are available to all preschoolers. Proponents of targeted services point to the benefits of efficiency and low cost, quality in small numbers, and public support. The intensity and duration of services required by children with the greatest needs can be provided with a small teacher to student ratio, and the public is more willing to pay for services when families cannot afford it on their own. However, proponents of universal programs refute these claims. They say targeted programs fail to reach many children, and all children benefit from the advantages of early intervention. Also, universal programs are perceived to be of higher quality because disadvantaged children are served in heterogeneous classes. Finally, although necessitating a larger budget, universal programs have greater public support because all children are served, and it keeps the tradition of the government showing responsibility for all children (Barnett, Brown, and Shore, 2004).
Targeted early interventions.

High/Scope Perry Preschool Project.

One of the longest evaluations of early intervention is the High/Scope Perry Preschool Project. The Perry Preschool Project, initiated in the early 1960s in Ypsilanti, Michigan, was motivated by the poor school performance of economically disadvantaged children and sought to improve their cognitive and social outcomes in the short and long run through participation in one to two years of preschool (Karoly, et al., 1998). David Weikart established the district’s preschool program and the High/Scope Educational Research Foundation, and Lawrence Schweinhart joined him in 1975. Research efforts focused on the impact of curriculum, the collaboration of school districts and Head Start, and long-term results (Schweinhart, 2002).

For the initial study, 123 African American students and their parents were enrolled in five waves between 1962 and 1967. All families with 3-year-olds in the city were invited to participate, and those children with a low socioeconomic status and IQ less than 85 were allowed entry to the study. Through random assignment, with the exception of siblings, 58 were assigned to the program and 65 to the control group (Schweinhart & Weikart, 1993; Karoly, et al., 1998). Participants were followed annually through age 11 and at 14, 15, 19, 27, and 40, with data collected through interviews, school records, and public record interviews.

The program participants attended preschool for 2½ hours per day from October-May, and teachers conducted weekly 90-minute home visits. The class size was 1 to 6, and all teachers were certified (Karoly, et al., 1998). Through a five-year evolution, the
The curriculum used in The Perry Preschool Project had three phases:

1. An influence of Piagetian theory;
2. Teachers taught specific Piagetian experimental tasks in hopes of accelerating children’s progress to move from one stage of cognitive development to the next; and
3. The notion of children as active learners and constructors of knowledge became central to the curriculum.

The Perry Preschool Project encouraged active learning, supportive adult-child interactions, a consistent daily routine, assessment, and a material-rich learning environment. As active learners, the child generated a plan of what s/he would do for the day, s/he would carry out activities in learning centers, and s/he would review with others what was done (Schweinhart & Weikert, 1993).

The first outcomes measured were changes in IQ. At the end of the program intervention, children in the preschool program had IQ scores that exceeded the control group by over 11 points. However, the favorable IQ effect for program participants began to decline after school entry, disappearing by second grade (age 8). These IQ effects were followed by improved academic achievement even after differences in IQ between the groups ceased to be statistically significant. For instance, achievement test scores for program participants remained significantly higher than those for the control group through age 14. Preschool participants had better grades and were more likely to have graduated from high school. At age 28, however, there were no differences in postsecondary education participation. Time in special education was significantly lower for program children at ages 19 and 27 (Karoly, et al., 1998). The most recent program
evaluation occurred when the participants were 40 (see Table 2).

**Table 2**

<table>
<thead>
<tr>
<th></th>
<th>Participants at age 40</th>
<th>Non-participants at age 40</th>
<th>Participants at age 27</th>
<th>Non-participants at age 27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>76%</td>
<td>62%</td>
<td>69%</td>
<td>56%</td>
</tr>
<tr>
<td>Annual earnings</td>
<td>$20,800</td>
<td>$15,300</td>
<td>$12,000</td>
<td>$10,000</td>
</tr>
<tr>
<td>Own home</td>
<td>37%</td>
<td>28%</td>
<td>27%</td>
<td>5%</td>
</tr>
<tr>
<td>Use of social services</td>
<td>71%</td>
<td>86%</td>
<td>59%</td>
<td>80%</td>
</tr>
<tr>
<td>Lifetime arrests</td>
<td>36%</td>
<td>55%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males raising own children</td>
<td>57%</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Like all program evaluations, the High/Scope Perry Preschool Project does elicit questions and criticisms that warrant consideration. The Perry Preschool Project has strong internal validity, because the children were assigned with simple random assignment, thus comparing a preschool experience against the impact of no preschool experience. The external validity is the extent to which participants and the program resemble the generalized population. Programs with similar characteristics can expect similar results, which were found to be statistically significant, despite the sample size.
One of the most argued points is the IQ fade out. For this study, researchers used the Stanford-Binet intelligence test, a multiage test used with individuals of a wide range of ages. According to Schweinhart, et al. (2005), the fade out was a result of examiners asking questions out of the children’s age expectations.

*Head Start.*

The High/Scope Perry Preschool Project and Head Start are often linked because of curriculum design. The programs differed in that The Perry Preschool Project had small class sizes and licensed teachers. However, they were similar in the problems experienced. The Perry Preschool Project had low attendance the first year (69%) and home visit appointments were often missed. Nonetheless, the results of the High/Scope Perry Preschool Project have been generalized to many other programs, including Head Start (Karoly, et al., 1998; Schweinart, et al., 2005).

Head Start was initiated during President Johnson’s War on Poverty in 1965. The project was a result of public and policymakers’ concern about the growing number of children living in poverty, the development of new child development theories, and a federal budget surplus. Despite the nation’s limited experience in early intervention for socioeconomically disadvantaged children without disabilities, Head Start was launched with the influence of Benjamin Bloom’s and Urie Bronfenbrenner’s work. In the 8-week program in 2,500 communities, nearly 500,000 4- and 5-year-olds received preschool designed as a comprehensive intervention with social, health, and education services in center-based and home environments (Karoly, et al., 1998). The program has expanded to
include parent education classes, studies of infant development, family service centers, migrant programs, and Early Head Start.

Head Start has served more than 15 million children at a cost of $31 billion since its inception. Like the discussions of High/Scope Perry, there have been numerous studies on the effectiveness of Head Start. The first comprehensive effort was The Westinghouse Report in 1969 (Cicirelli). Using a national sample of children with 70 percent drawn from the first summer participants and 30 percent from the subsequent full-year program participants, children were matched retrospectively with a control group, and cognitive effects using standardized measures were assessed. The Westinghouse analysis did not find any favorable cognitive effects from participation in the summer program (Cicirelli, 1969). It did find that in first and second grade, full-year participants performed better on a school readiness test, but the researchers were unable to draw conclusions about third grade performance because of the small sample size. There were also geographic and ethnic sub-group variations in performance. Based on these results, the study concluded that Head Start was not beneficial. However, the study’s design, with its retrospective control group, raised serious concerns regarding the legitimacy of its conclusions (Karoly, et al., 1998).

The results of the Westinghouse Report, government policy shift away from social programs, and the work of Arthur Jensen made the public question the effectiveness of early intervention. Jensen wrote early intervention could not be successful because nature was dominant over environmental influences on intelligence. With that mind-set, many ignored Bronfenbrenner’s 1971 early intervention literature review, focusing on his finding that short-term benefits fade out instead of his emphasis
on family-focused interventions as a remedy (Bronfenbrenner, 1974).

In the 1998 reauthorization of Head Start, Congress mandated an impact study to address two questions: 1) What difference does Head Start make to key outcomes of development and leaning for low-income children? What difference does Head Start make to parental practices that contribute to children’s school readiness? and 2) Under what circumstances does Head Start achieve the greatest impact? What works for which children? What Head Start services are most related to impact? The Head Start Impact Study was conducted nationally (23 states) with 5,000 newly entering, eligible 3- and 4-year-old children who were randomly assigned to either a Head Start group that had access to Head Start services or a control group that did not. Those in the control group could enroll in another early childhood program as well. Data for these children was collected from fall 2002 to spring 2006 (U.S. Department of Health and Human Services, 2010) using in-person interviews with parents, in-person child assessments, direct observations of the quality of different early childhood care settings, and teacher ratings of children.

Where the High/Scope Perry Preschool study included only African-American children, the Head Start Impact Study participants were more diverse. The 3-year-old group was evenly distributed between Black (32.8%), Hispanic (37.4%), and White/Other (29.8%) children. Half of the 4-year-old group was Hispanic children (51.6%, Black – 17.5%, White/Other – 30.8%). The Head Start Study was also unique in that it was generalizable as a full national program.

The key findings of the Head Start Impact Study follow (U.S. Department of
Health and Human Services, 2010):

- Providing access to Head Start had a positive impact on children’s preschool experiences. There were statistically significant differences between the Head Start group and the control group on every measure of children’s preschool experiences measured in this study.
- Access to Head Start had positive impacts on several aspects of children’s school readiness during their time in the program.
  - For the 4-year-old group, benefits at the end of the Head Start year were concentrated in language and literacy elements of the cognitive domain, including impacts on vocabulary (Peabody Picture Vocabulary Test), letter-word identification, spelling, pre-academic skills, color identification, letter naming, and parent-reported emergent literacy. There was also an impact on access to dental care in the health domain.
  - For the 3-year-old group, benefits were found in all four domains examined at the end of the Head Start and age 4 years, including impacts on vocabulary (PPVT), letter-word identification, pre-academic skills, letter naming, elision (phonological processing), parent-reported emergent literacy, McCarthy Draw-a-Design (perceptual motor skills and pre-writing), applied problems (math), hyperactive behavior, withdrawn behavior, dental care, health status, parent spanking, parent reading to child, and family cultural enrichment activities.
- However, the advantages children gained during their Head Start at 4 years of age yielded only a few statistically significant differences in outcomes at the end of first grade for the sample as a whole. Impacts at the end of kindergarten were scattered and are mentioned below only when they appear to be related to the first grade impacts.
  - Cognitive Outcomes. By the end of 1st grade, only a single cognitive impact was found for each cohort. Head Start group children did significantly better on the PPVT (a vocabulary measure) for 4-year-olds and on the Woodcock-Johnson III test of Oral Comprehension for the 3-year-olds.
  - Social-Emotional Outcomes. By the end of 1st grade, there was some evidence that the 3-year-old cohort had closer and more positive relationships with their parents. These impacts were preceded by other social-emotional impacts (improvements in behavior-hyperactive behavior and total problem behavior, and social skills and positive approaches to learning) in the earlier years. The findings for the 4-year-old cohort are inconsistent with teachers reporting that children in the Head Start group are more shy and socially reticent and have more problems with student and teacher interactions than control group children while their parents are reporting that they are less withdrawn.
Health Outcomes. For the 4-year-old cohort, there was an impact on child health insurance coverage at the end of kindergarten and 1st grade, and an impact on child health status in kindergarten. For the 3-year-olds, there was an impact on child health insurance coverage in kindergarten only.

Parenting Outcomes. For the 3-year-old cohort, there were positive favorable impacts on use of time-out and authoritarian parenting at the end of 1st grade and on spanking and time out in kindergarten. These favorable impacts for authoritarian parenting and spanking were also demonstrated in the earlier years. For the 4-year-old cohort, there were no significant parenting practices impacts in kindergarten or 1st grade (pp. xix-xxxvi).

The Impact Study’s report shows that by the end of first grade, children assigned to the Head Start group had very similar levels of achievement as children assigned to the comparison group. It appears that this was because the comparison children were able to catch up to their peers in the Head Start treatment group during the first two years of school (National Forum on Early Childhood Policy and Programs, 2010). An exception is, dual-language learners and children with special needs benefited more from Head Start participation than other groups. Although few impacts persisted through first grade for the study sample as a whole, children with special needs and those who were dual-language learners who enrolled in Head Start showed important long-run benefits. Specifically, children reported by their parents to have special needs showed benefits in math and social behaviors through the end of first grade, while children who were dual-language learners benefited across multiple assessments of language development and math skills into kindergarten.

There is room for improvement in Head Start and the study. The quality of Head Start centers was variable. For the 4-year-olds, fewer than one in 20 were in Head Start centers with an “excellent” quality rating, although virtually none were in centers rated
“poor.” Only about half were in centers with the recommended pupil/staff ratios. The study does not consider the role of quality in elementary school. Most children in both the Head Start and comparison groups enrolled in schools that served low-income children. Two-thirds of their classmates qualified for free- or reduced-price lunches and about one-third were not proficient in reading or math. Whether and how school experiences in kindergarten and first grade affect the likelihood that comparison-group students were able to catch up to the Head Start group is unknown. Also, the Head Start Impact Study did not answer the question of how the effects of Head Start and public preschool programs compare by the end of first grade. Moreover, the two programs typically do not serve identical populations. Head Start eligibility is based on family income below the federal poverty threshold or a child’s special needs. State and local prekindergarten programs also serve poor children, but often also enroll a broader population of children who are considered “at risk” based on other family and child characteristics. Typically, Head Start programs serve children from families that are more disadvantaged than those who are enrolled in state and local prekindergarten programs (National Forum on Early Childhood Policy and Programs, 2010).

**Chicago Child-Parent Center Program.**

The Chicago Child-Parent Center (CPC) was founded in 1967 to serve families in high-poverty neighborhoods that were not being served by Head Start or similar programs. With federal funds, the program provided half-day services during the 9-month school year for 3- and 4-year-olds. In 1978 additional funding allowed for the expansion of services to children through third grade, including full-day kindergarten (Reynolds, 1994 & 1997; Reynolds, Chang, & Temple, 1997). Unlike Head Start, CPCs are
integrated within elementary schools. Although the curriculum is not uniform, all centers provide health, social, academic, and school support services.

The Longitudinal Study of Children at Risk (LSCR) followed 1,539 low-income minority children (95% Black, 5% Hispanic) in 26 Chicago-area kindergarten programs (Reynolds, 1997). The quasi-experiment compared 1,150 participants from 20 CPCs to 389 non-participants from six randomly selected schools for low-income children. Using psychometric and econometric techniques and controlling for background variables, researchers concluded that, at the end of the intervention at age nine, those who participated in a CPC had higher reading and math achievement scores, lower rates of grade retention, and higher ratings of parental involvement. Years of special education services were significantly lower for treatment children by age 14 (Reynolds, 1994 & 1997). Further, at age 14, those who had been in the program for six years had the largest gains compared with non-participants in reading and math scores, grade retention, and special education. Those who participated in four or more years had the greatest benefits, and participation in preschool and primary grade components conferred the greatest benefits (Reynolds, 1994).

**Carolina Abecedarian Project.**

Although similar to other targeted interventions in the desire to assist disadvantaged families, the Carolina Abecedarian program began just weeks after the child’s birth, with a high-quality educational day-care program. Started in 1972 at the Frank Porter Graham Child Development Center of the University of North Carolina, the goal of the intervention was to prevent mild mental retardation and improve social and
academic competence at school entry for economically disadvantaged children (Ramey, Dorval, and Baker-Ward, 1983; Ramey and Campbell, 1984, 1991; Campbell and Ramey, 1994 & 1995). From 1972-1977, 109 families were recruited from prenatal clinics and social service agencies based on “high risk” factors: parental education, income, intelligence, and antisocial and maladaptive behaviors in the family. This resulted in 111 children with a sample of 98% African American and mostly first-time single mothers who were on average 20 years old. At six weeks old, the children were assigned to either a preschool intervention or control group, and at five years old, they were assigned to school-age intervention through age eight or a control group. The children were assigned to both interventions, one of the interventions, or neither (Karoly, et al., 1998; Ramey, Pungello, Sparling, and Miller-Johnson, 2002).

The day care/preschool program was a full-day year-round center-based intervention with specially designed curricula, medical services, and parental support. At the end of the intervention, the treatment group scored seven points higher on the Wechsler Preschool and Primary Scale of Intelligence (Ramey & Campbell, 1991). Significant differences in IQ continued to be found until age 15. Although IQ effect was no longer significant, children who participated in preschool continued to have higher scores in reading and math, less grade retention, and less special education placement (Campbell and Ramey, 1995). School-age treatment served to maintain preschool benefits for reading, but the effects were generally weaker than those of the preschool program (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002). At 21 years old, cognitive test scores and reading achievement continued to be higher for the treatment group, and they were more likely to attend a four-year college (35% vs. 17%)
As with other early interventions, there are criticisms of the study. The sample size is small; however, there can be confidence in the results, because they are consistent with the theories being tested across multiple studies. Second, the IQ scores are no longer significantly different between the treatment and control groups after three or four years in public school. That has previously been explained by the nature of the testing instrument. Economic dependence could not yet be evaluated, in contrast to The Perry Preschool Project, because most of the participants were enrolled in a four year college at the time of follow-up. The study also hoped to compare delinquency and crime to The Perry Preschool Project; however, different locations and time periods prevented a measure of comparison. However, in self-reporting and a review of state records those in the Abecedarian study revealed similar arrest charges (41.2% vs. 44.9%) (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002).

**Universal Early Interventions.**

The National Institute for Early Education Research (NIEER) publishes a yearly preschool yearbook. The 2011 edition defines a state preschool program as an initiative that:

- is funded, controlled, and directed by the state;
- serves children preschool age;
- has early childhood education as the primary focus;
- offers a group learning experience at least two days per week;
- is separate from subsidized child care;
- is not primarily designed to serve children with special needs although they may be included; and
- is separate from Head Start (NIEER, 2011, pp. 21).
Based upon this definition, 39 states offer an early intervention program serving 1.3 million children. Although enrollment increased nationally in 2010-2011, total funding decreased by $60 million, following a $30 million decrease in 2009-2010. More than a half million children, or 43 percent nationwide, are served in preschool programs that fail to meet half of NIEER’s quality standard benchmarks (NIEER, 2001, pp. 5):

1. comprehensive learning standards;
2. teachers with a bachelor degree;
3. teachers with specialized training in early childhood;
4. assistant teachers with an Child Development Associate credential or the equivalent;
5. teacher in-service training of at least 15 hours per year;
6. maximum class sizes of 20 or less;
7. staff to child ratios of 1 to 10 or better;
8. vision, hearing and health screening and referral and support services;
9. at least one meal per day provided; and
10. site visits.

**Oklahoma Early Childhood Four Year Old Program.**

One state that has received a great deal of attention for its universal program is Oklahoma. The state ranks second in terms of access for 4-year-olds and met nine of NIEER’s quality standard benchmarks in 2011. In 1980, Oklahoma established the Early Childhood Four-Year-Old Program, a pilot preschool education program, with the goal of eventually serving all four year olds in the state. In 1998 the goal was met, as Oklahoma became the second state in the nation to offer free, voluntary access to preschool programs for all four year olds. Today, the program is offered in 98 percent of school districts. While the state does not provide specific funding for three year olds, through a combination of funding sources, 2,238 three-year-olds were served in pre-K classrooms during the 2010-2011 school year (NIEER, 2011).
In evaluating early intervention programs, cognitive achievement is a discussion point. Researchers from the National Institute for Early Childhood Research, Northwestern University, and the Robin Hood Foundation studied the effects of five state-funded preschool programs on children’s learning at the beginning of kindergarten. The sample included 5,000 children in Michigan, New Jersey, Oklahoma, South Carolina, and West Virginia. Common across all programs was the teachers’ education, teachers’ compensation, and class size with a full-time aide. In the fall of 2004, receptive vocabulary was measured using the Peabody Picture Vocabulary Test (PPVT), mathematical skills were measured with the Woodcock-Johnson Tests of Achievement, and print awareness abilities were measured with the Preschool Comprehensive Test of Phonological & Print Processing. The treatment group (2,547) was children starting kindergarten that year who had previously attended preschool, and the comparison children (2,453) were 4-year-olds just starting preschool. In Oklahoma, on average, treatment children scored 5.12 points higher than comparisons on the PPVT, 1.36 points higher on the Woodcock-Johnson, and 11.46 percent more print awareness. Overall, children in state pre-k posted vocabulary scores that were 31 percent higher and math gains that were 44 percent higher than those of non-participants. These gains placed pre-k children three to four months ahead of non-participants, largely due to participation in the state program. The greatest gains occurred in print awareness, where participants had an 85 percent increase, which suggests these outcomes strongly predict later reading success (Barnett, Jung, Wong, Cook, and Lamy, 2007; Wong, Cook, Barnett, and Jung, 2008).

Also utilizing the Woodcock-Johnson to compare children who had just completed preschool (1,461) to those just beginning (1,567), a study on short-term gains
in Tulsa, Oklahoma (Gormley, Gayer, Phillips, and Dawsin, 2005; Gormley, Phillips, and Gayer 2008) revealed documented results of significant academic growth across all income and racial groups. Participation in preschool was a more powerful predictor of children’s pre-reading and pre-writing scores than demographic variables such as race, family income, and mother’s education level. The evaluation of the state’s largest school district showed significant increases in letter-word identification, spelling, and applied problem solving among students on free or reduced-priced lunch and those not participating in the food subsidy program. Children of all racial groups also exhibited academic gains. In particular, the study found a narrowing of the achievement gap for Hispanic children. These students exhibited an eleven-month gain in letter-word recognition and a six-month gain in applied problem solving compared to the corresponding gains (nine-months and three-months respectively) for white children.

**Cost Analysis.**

Is early intervention worthwhile? The programs generate four types of savings:

1. Increased tax revenues result from increased employment and earnings by program participants;
2. Decreased welfare outlays, including Medicaid, food stamps and general assistance typically funded by counties;
3. Reduced expenditures for education, heath, and social services. All of the programs pointed to reduced special education placement; and
4. Decrease in criminal justice system costs, including arrests and incarceration expenses (Karoly, et al., 1998, pp. 1-3).

A longitudinal study of children who had participated in the Perry Preschool Project (Schweinart and Weikart, 1980) found that when schools invest about $3,000 for one year of preschool education for a child, they immediately begin to recover their investment through savings in special education services. Benefits included $668 from
the mother’s released time while the child attended preschool; $3,353 saved by the public schools because children with preschool education had fewer years in grades; and $10,798 in additional projected lifetime earnings for the child.

Using data from the Chicago Longitudinal Study, Reynolds, Temple, White, Ou, and Robertson (2011) concluded, “The preschool program provided a total return to society of $10.83 per dollar invested (18% annual return). The primary sources of benefits were increased earnings and tax revenues and averted criminal justice system costs. The school-age program had a societal return of $3.97 per dollar invested (10% annual return). The extended intervention program (4–6 years) had a societal return of $8.24 (18% annual return)” (pp. 379).

Unfortunately, the Head Start Impact Study did not follow children long enough to answer whether Head Start generates more benefits than costs. Previous studies of children who attended Head Start in earlier decades suggest that the program indeed produced long-run benefits, although none conducted a formal cost/benefit study. Given the large increases in the availability of center-based programs for low-income preschoolers, questions persist about the generalizability of those studies to the more crowded early childhood and preschool field that exists today (U.S. Department of Health and Human Services, 2010).

**Classroom Read Alouds**

The early intervention environments include language arts curricula with interactive read alouds. As mentioned, interactive read alouds hold promise for the development of language and thinking skills through dynamic interactions between the reader, text, and teacher in a community event. Interactive read alouds in which adults
model fluent oral reading while using an animated tone and expression and stopping periodically to thoughtfully question students to focus them on specifics of the text (Fisher, et al., 2004), has received much attention (Holdaway, 1979; Dickinson, 2001; Hindman, Connor, Jewkes, & Morrison, 2008; Zucker, Justice, & Piasta, 2010). The interactive read aloud may be considered a shared read aloud, because an adult is reading aloud to children, and text size and format may vary. Active participation enhances the development of comprehension, oral language, and a sense of story structure through activities such as reconstruction, role-playing, and retelling (Morrow, 1985).

The presence of this supportive and emulative adult who answers questions directly and readily without interfering with what a child is trying to do may account for early reading motivation (Holdaway, 1979). Although early literacy experiences – often referred to as bedtime stories - were studied in home environments, the resulting knowledge can be transferred to preschool classrooms. The major purposes of these home readings were to:

1. Give pleasure to the listener,
2. Develop strong positive associations with the flow of story language and the physical characteristics of books, and
3. Encourage lively responses and questions through rich and wide-ranging interactions.

Through activity, such as reconstruction, three and four year olds display language in proper use, deep comprehension, and emotional response. Literacy-oriented preschoolers have developed high expectations of print, built a set of oral models for language of books and practiced these models in conversation, begun to understand conventions, and
learned to listen for long periods to continuous language. Also, they are able to attend to language without reference to the immediate situation around them and respond in complex ways by creating images from past experiences (Holdaway, 1979).

Holdaway suggested shared reading could work in other settings; however, the home experience required adjustments to be successful in schools. The home experience provided quiet, warmth, and personal exclusiveness. The school experiences incorporated culturally significant language as a mode of learning to achieve a “corporate spirit” necessary for a whole class to learn together. The home experience also provided visual intimacy and purposeful use with print. To achieve this in schools, Holdaway incorporated enlarged print, such as big books and charts (Holdaway, 1979). In using significant language and making the text visible to all listeners, one can assume the benefits of the home experience can be transferred to school settings.

One critical aspect of home learning that should be maintained is natural and developmental learning. As children are presented with more complex tasks, such as oral language and cognitive categorization, they use strategies to cope in their learning (Holdaway, 1984).

1. Children use the competency built into the human brain to carry out tasks beyond their present competence to describe or understand. Therefore, it is important for teachers to treat learning as an expectation.
2. Children observe their environment with intense curiosity, emulating models with energy, persistence, and eye for detail.
3. Children determinedly make sense of their world. Through this desire, they work through miscues and errors for understanding.
4. Children use their knowledge of the world and of language to predict both meanings and details in the behavior of those around them. They compensate for gaps in knowledge and for weakness in areas of skill by using the knowledge and skill that are accessible to them.

5. Children approximate and take calculated risks judging for themselves what new challenges will be encompassed within each day.

6. Children monitor their own performance moment by moment, bringing into play the feedback capacity of the brain. They compare their performance with the models they emulate.

7. Children participate actively when appropriate, enjoying the sense of community in learning.

8. Children practice at their own pace and at their own level of persistence.

9. Children take risks between assimilation and accommodation.

10. Children avoid pain and seek pleasure. Therefore, teachers should present a varied body of literature, and give children the freedom to select and share what is relevant to them (Holdaway, 1984).

Holdaway’s observations of children’s coping strategies reflect what is known from the Transactional Model of Reading and Sociocognitive Model of Reading (Rosenblatt, 1938, Ruddell & Unrau, 2004). Dynamic interactions in a learning community and the guidance of a more experienced model can lead to book experiences that allow for language, deep comprehension, and emotional responses often seen in home settings.
A number of factors are critical to book reading. Fisher, et al. (2004) identified seven components of an effective interactive read aloud used unanimously by 25 expert teachers and by nearly 50 percent of additional teachers who served as cooperating teachers for student teachers:

1. Books chosen were appropriate to students’ interests and matched to their developmental, emotional, and social levels;
2. Selections had been previewed and practiced by the teacher;
3. A clear purpose for the read aloud was established;
4. Teachers modeled fluent oral reading when they read the text;
5. Teachers were animated and used expression;
6. Teachers stopped periodically and thoughtfully questioned the students to focus them on specifics of the text; and
7. Connections were made to independent reading and writing (34% of additional teachers).

Also, used frequently, but not unanimously, by the expert teachers was an invitation to gather together in the front of the room.

Studies also point to the amount of time spent reading and teachers’ reading and discussion styles as influencing factors to students’ responses (McKeown & Beck, 2006; Danis, Bernard, & Leproux, 2000; Zucker, Justice, Piasta, & Kaderavek, 2010). In the studies, teachers differed on when and to what extent they engaged children in conversations as they read, the nature of questions they asked, and the dramatic qualities of their reading used to hold student attention (Dickinson, McCabe, & Anastasopoulos, 2002).
Time.

Time is essential in read alouds, because it is a social and learning process requiring active participation from teachers and learners. It is suggested teachers allow for 45 minutes of read-aloud time per day for a full day of school. However, based on data from 537 classroom observations, Hoffman, Roser, and Battle (1993) found “the classroom teacher read to students from a tradebook between 10 and 20 minutes. The chosen literature was not connected to a unit of study, and the amount of discussion related to the book took fewer than five minutes, including talk before and after the reading” (pp. 500). Dickinson et al. (2002) made 166 observations in 100 classrooms and found disparity in the amount of interactive and shared book reading. One teacher spent 45 minutes reading to her students, while another read eight books. However, no book reading was observed in 66 cases. Of the 100 observations of book reading, the average was 1.26 books read per day for a total of 9.56 minutes. This total was 7-8% of the children’s day – approximately 5% less than the amount of time spent in transition between activities. Dickinson (2001a) found similar results with 1-4% of the preschool day spent in a book-reading context. In a comparison of environments, McGill-Franzen, Lanford, and Adams (2002) observed 29 minutes per day spent in read alouds in religion affiliated nursery school, 17 minutes per day in Head Start pre-kindergarten, and nine minutes per day in public school Pre-K. It is especially important to note that engagement with print, rather than just the act of reading helps children become readers (Meyer, Wardrip, Stahl, & Linn, 1994).
Reading strategies during interactive book reading

**Read aloud style.**

A teacher’s read aloud style can impact the behavior of the children, the flow of the activity, and the engagement of the children (Morrow, 1990; Reese & Cox, 1999; Dickinson et al., 2002; Fisher, et al., 2004; Moschovaki, Meadows, & Pellegrini, 2007). Teachers with an “explicit management” style directly called for children’s attention, demanded children raise their hands to contribute to conversation, and made explicit references to the rules of participation. Those with a more “implicit management” style used children’s names, looked at children, asked questions about the story, and focused on the story as opposed to the organization of the activity. A more implicit style furthered literacy instruction, because children were attending to the book reading and were engaged rather than acting out (Dickinson et al., 2002).

As teachers read, the approach they adopted helped maintain student engagement. The Home-School Study for Language and Literacy Development exposed three distinct approaches to reading (Dickinson & Smith, 1994). The co-constructive approach was characterized by high amounts of talk by both children and teachers during the book reading, but little talk before or after. This approach is similar to a describer style that focused on describing pictures during the reading (Reese & Cox, 1999). The didactic-interactional approach involved limited amounts of talk before, during, or after reading. Most of the interaction included chiming a repeated phrase or a familiar text and answering simple recall questions based on the text. The performance-oriented approach reserved talk for before or after reading with little talk during. This is similar to Reese & Cox’s (1999) performance-oriented style that introduced the book and discussed
comprehension. Dickinson & Smith’s research (1994) found the performance-oriented approach most successful for vocabulary development; however, Reese and Cox (1999) contradicted this in stating the describer style resulted in the greatest overall benefits for children’s vocabulary and print skills. The performance-oriented style was found to be most beneficial for comprehension; although Karweit (1994) suggested a “running commentary” is helpful for students with limited experience with stories and print, because the teacher is modeling comprehension strategies.

A teacher’s style is reflected in the roles they adopt as readers. Roser & Martinez (1985) identified the roles as co-respondents, informers/monitors, and directors. As co-responders, teachers initiated topics of discussion for the purposes of describing information in illustrations, recounting parts of stories, sharing personal reactions, and inviting children to share responses. As informers/monitors, teachers explained different aspects of stories and provided information to broaden the students’ understanding. As directors, teachers introduced stories, announced their conclusion, and assumed a leadership role in discussion. It was in the role of co-responders that teachers allowed students to mature and interact richly with texts; and in the role of informers/monitors, the teachers encouraged breadth of response. Through dialogue, teachers confirm student interactions, extend student thinking, and build meaning with the class (Wells, 1995; Sipe, 2008; Wiseman, 2011). This engagement in discussion appears to contribute more to comprehension development than simply reading aloud (Duke & Carlisle, 2011). When students are encouraged to respond freely, meaning making profits from insights of young children that would never have surfaced if they were only permitted to respond to teacher questions (Wells, 1995; Sipe, 2008).
Teacher behavior and student engagement.

Additional research focused on dialogic reading that encouraged children’s increasing participation during the book session through the use of open-ended questions, expansion of children’s utterances and positive feedback (Moschovaki, Meadows, & Pellegrini, 2007). Further, while teachers’ affective strategies are important for both text comprehension and children’s affective engagement, children’s affective reactions also influence the teachers’ affective presentation. An affective presentation style showed a positive effect on the language and literacy development of low income two to four year olds. Morrow (1990) found similar results in her study of small group story readings. Using two groups of low socioeconomic status five-year-old kindergartners, Morrow found story readings in small groups increased the comprehension and the number of complex questions and comments made by the children in the experimental group. The results were due to the interactive behaviors of the teacher. Interactive behaviors of the teacher are listed in Table 3.

Table 3

<table>
<thead>
<tr>
<th>Interactive teacher behaviors</th>
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<tbody>
<tr>
<td>• Questioning,</td>
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<td>• Scaffolding,</td>
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<tr>
<td>• Dialogue and response,</td>
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<tr>
<td>• Offering praise or positive reinforcement,</td>
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<tr>
<td>• Giving or extending information,</td>
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<td>• Clarifying information,</td>
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<td>• Restating information,</td>
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<tr>
<td>• Directing discussion,</td>
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<tr>
<td>• Sharing personal reactions, and</td>
</tr>
<tr>
<td>• Relating concepts to life experiences.</td>
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</table>

Direct instruction encourages intertextual connections during shared reading (Torr, 2007). Torr’s analysis of intertextual connections was based upon the Transactional Model and Halliday’s systematic functional linguistic theory (1975) that suggested texts can relate to one another in the following ways:

- On the basis of their representational content of subject matter, referred to as co-thematic intertexts;
- On the basis of their orientation towards an implied reader, or the point of view or stance adopted, referred to as co-orienting intertexts; and
- On the basis of their genre structure, referred to as co-generic intertexts.

Very young children actively draw on their knowledge of other texts and their personal experiences to reflect on the meanings they encounter in unfamiliar books. The extent to which adults are able to interpret and integrate the intertexts into the discussion advances children’s literacy development. Intertextuality shows what the children are learning, makes the activity more pleasurable, creates a literacy community, and allows for reflection and abstract thoughts (Pantaleo, 2007; Torr, 2007).

Further McGee and Schickendanz (2007) suggest other activities, such as inviting preschoolers to retell or dramatize stories; reading several books on a similar topic and inviting children to play with objects related to the concepts or characters introduced; reading a book repeatedly (Sulzby & Teale, 1987); inserting short definitions of some words while reading aloud; and encouraging children to use the same words when they answer questions, discuss book events, or describe illustrations, raise the value of read-alouds. Additionally, McGee and Schickendanz suggest interactive read-alouds of the same book with the first read-aloud including an introduction, vocabulary support
techniques, analytical comments and questions, and an after reading “why” question. The second read-aloud should occur 1-2 days later and enrich children’s comprehension and provide further opportunities for analytic talk, and the third read-aloud should occur 1-2 days after the second and be used for guided reconstructions. These steps provide a systematic approach for enhancing vocabulary and comprehension among the preschool children.

**Questioning.**

Questions serve as scaffolds to aid students’ knowledge building and as a means to assess their learning (Kintsch, 2005). There is a continuum of how deeply the questions engage the learner’s understanding. Questions that require readers to recognize or recall facts or details tap shallower levels of comprehension. Deeper level questions probe the learner’s ability to solve problems, form connections, and explain relationships (Kintsch, 2005). When teachers ask literal questions, their students tend to focus on literal reading and recall rather than critical, higher-level, interpretive readings (Almasi, 2002).

When looking at the questioning habits of teachers, one could study pre- and post-questioning portions of the reading activity. Observing direct reading activity, Morrow (1984) reported on traditional level questioning – the utilization of literal, inferential, and critical questions – and story structure questioning – theme, setting, plot episodes, and a resolution. This structure is particularly beneficial when reading narratives. Narratives were more likely to invoke a bi-directional relationship between the teacher and students, thus having a greater impact (Moschovaki, Meadows, & Pellegrini, 2007). Pre- and post-questioning was found to improve children’s comprehension regardless of the questioning strategies used. Although students fared best based in the treatment group
Thinking strategies during interactive book reading

(when questions were asked at literal or inferential levels), it was also found that the story structure approach had a small positive effect on the ability to answer traditional comprehension questions and vice versa. Text features, such as rhyming, also encouraged language play (Moschovaki, Meadows, & Pellegrini, 2007). However, those that received lessons in traditional level and story structure questioning proved superior in their responses (Morrow, 1984). These benefits lasted over time and showed a need for variety in questioning patterns and discussion styles.

A variety of questioning patterns leads to the examination of cognitively challenging questions. Massey, Pence, Justice, and Bowles (2008) indicated that questions characterized 33.5% of all teacher utterances, with management questions occurring most frequently (44.8%), followed by more cognitively challenging questions (32.5%), and less cognitively challenging questions (22.7%) (See Chart1). Management-related questions occurred most frequently in teacher-directed and child-directed contexts, whereas more cognitively challenging questions occurred most frequently during shared storybook reading. Moschovaki and Meadows (2005) also found a significant portion of book discussion related to management interaction (22.3%). Their study also showed 19 of 20 groups engaged in more low cognitive demand discussion with fiction books and narrative texts, while 18 of 20 groups focused more on high cognitive demand discussion with information books and expository texts. Hindman et al. (2008) found teachers generally choose narrative texts.
Chart 1  
Percentage of teacher utterances by question type


**Student language.**

Narrative book choice supported curricular goals, child engagement, classroom management, and the promotion of decontextualized meaning-related conversation. Decontextualized talk is grounded in the language used and includes giving directions, explaining a process, telling a story, and describing a place or object. Since this closely mirrors the language experienced in books, exposure to decontextualized experiences during preschool is the number one predictor of reading comprehension success once students reach third and fourth grade (Snow, 1991). Gest et al. (2006) found decontextualized talk most common during mealtime, when 65% of all teachers engaged in at least some such talk, but was less common during book reading (43%) and free play (35%) (See Chart 2).
Types of talk in Head Start classrooms


Through the Home-School Study for Language and Literacy Development - a study examining the social prerequisites to literacy success, identifiable in both home and school interactions - Dickinson and Smith (1991) coded the types of adult-student talk in free play, small group time, large group time, and seatwork time. They found 10 types of interactions (see Table 4).
Table 4
Adult-student interactions

- Pretending – fantasy-oriented, usually initiated and enacted between children;
- Non-present – talk about the past, including personal narratives and story retellings or talk about the future;
- Conceptual focus – talk about language, world knowledge, and co-construction of ongoing events;
- Book reading – talk about books and the actual reading of books;
- Engaged talk – general conversation;
- Didactic – talk that is aimed at imparting information;
- Skill routines – language familiar to all participants, such as naming and labeling, and reciting numbers and letters;
- Print skills – decoding, pre-reading activities, and spelling practice;
- Control talk – managerial in tone in which behavior is the primary target; and
- Non-language – periods of silence, gross motor activity, and interactions lasting less than five seconds.


Nearly half of the types of talk found in the Home-School Study for Language and Literacy Development was non-language for 3- and 4-year-old learners. When the children were 3-years-old, the types of talk they were likely to be engaged in were skill routines or didactic. When the children were 4-years-old, the types of talk they were likely to be engaged in were skill routines and control talk. There was also an increase in the amount of time spent on print skills and a decrease in time spent on book reading (Dickinson & Smith, 1991).

Interactive book reading, including books selected based upon the interests of the children and props and extension activities supporting the text, led to an increase in children’s vocabulary (Wasik & Bond, 2001; Justice, et al. 2005). Coined by Mercer in 1995, interthinking links the cognitive and social functions of group talk that so often occurs during interactive book reading (Pantaleo, 2007). Through group talk, children
scaffold interpretations, extend understandings, explore significances, and construct storylines. As they listen to their own talk and the talk of others, children develop understanding of themselves and their world (Mercer, 1995). “Children’s responses to quality literature show individual and collective zones of proximal development as young children listen carefully and think critically and deeply with other group members and push the group to deeper understandings and investigations of life” (Whitmore, Martens, Goodman, & Owocki, 2004, pp. 307). The opportunity to grapple with challenging concepts and raise and resolve questions through social texts presents intellectual challenge as learners connect ideas to their personal knowledge of the world (Whitmore, et al., 2004). These opportunities in interactive read alouds may be a primary intervention for at-risk students (Justice, et al., 2005).

**Developing Comprehension in Young Children**

**Metacognition.**

Metacognition is the process of active control over one’s cognition to accomplish a task or solve a problem (Flavell, 1978). It plays an important role in oral communication, oral persuasion, oral comprehension, reading comprehension, writing, language acquisition, attention, memory, problem solving, social cognition, self control, and self instruction (Flavell, 1979). Metacognition encompasses two aspects: self-appraisal and self-management (Feng & Cox, 1999). Self-appraisal is knowledge about cognition and a conscious access to one’s own cognitive operations and reflection about those of others. Self-management is the monitoring, regulation, and orchestration of intellectual performance. It involves strategic planning, monitoring, and regulating action
during the construction of meaning in or from text. Through regulation, readers and writers modify their behaviors in order to facilitate comprehension.

Vygotsky’s cognitive development theory links speaking and thinking through the regulatory function of language and internalization of others’ speech, and this theory has been posited as valid across ages and levels of reading skill (Lawrence & Snow, 2011). Language can express inner cognitive processes through “inner speech,” speech embodied in thought (Feng & Cox, 1999). Thus, metacognition may be observed in children’s speech as they engage in challenging activities, such as responding to deep structure questioning (Pressley & Harris, 2008). Private and social talk help children shape and share the imagined worlds that become written text (Dyson, 1989).

In preschool, a typically developing child has stronger receptive than expressive language, is egocentric, and does not realize others have different perspectives. However, children as young as three use talk to rehearse for composing, to narrate what they are writing, to provide the play-by-play action of their drawings, and to clarify for others their intended meanings (Dyson, 1989). Expressive language skills begin to evolve when one turns four. The child begins to sequence events, uses drawings as representations, is more self-directed, and has self-esteem reflective of the opinions of others. Skarasis-Doyle (2002) demonstrated that the detection task revealed emerging comprehension self-management in young children. The detection task is a novelty detection task that informs executive functioning such as self-management/monitoring and regulation. The children sustain attention throughout a story and detect disruptions to their expectations. Young children could identify inconsistencies in text that was read to them.
However, because management/monitoring is a multi-task cognitive process, it is believed that there might be limits to how much younger children can focus on at a specific time (Skarasis-Doyle, 2002). In 1994, Cox found that 26 out of 40 children made implicit and explicit regulatory utterances that demonstrated control over the context of the development of their personal story. The children made metalinguistic statements that reflected their ability to think about, plan, and monitor how their stories developed. Cox concluded that strategic control over comprehension might develop early in children who have had more advanced literacy activities (Cox, 1994; Martin & Kragler, 2011).

Three-year-olds detect comprehension problems when their attentional abilities are exceeded. The results of a comprehension test indicated that young children have great difficulty understanding stories presented simultaneously (Pillow, 1988). Three-year-olds’ ability to benefit from experience indicates that they detected comprehension problems when listening to two stories at once. The awareness was sufficiently lasting to allow them to change their strategy on subsequent trials occurring over an interval of a few minutes. The ability to manage and respond to comprehension problems that arise when attentional limits are exceeded develops prior to the knowledge required to anticipate such problems in advance. This early management ability could facilitate the acquisition of knowledge about comprehension abilities. Knowing capacity limits is important for self-regulation of attentional behavior and inferring another person’s knowledge.

Marie Clay expanded upon the constructive process of Vygotsky by suggesting teachers consider children as constructors of responses and knowledge. A child acts on his/her own theories of how things work and changes his/her theories slowly. According
to the Piagetian explanation, the child will pay attention to instances that conform and contradict his/her theory, and the instances may lead a child to activate his/her search for more knowledge. As a constructor, the child uses thinking, oral language, reading, and early writing to make sense of his/her world. “When a child becomes fast and fluent in reproducing the things s/he knows, we can understand how s/he can attend to new information, features that were not noticed before. When you can respond to earlier learning without much attention you are freed to notice new features and make links to other things you know. Learning to read and write is creating vast networks of links between known features of linguistic and real world events” (Clay, 1986, pp. 767). As children express meanings in speech, in writing, and in constructing they become more proficient learners. “To develop constructive processes and to make the child learner bold enough to use them, the teacher has to give the child opportunities to construct his/her own responses at least 50% of the time” (Clay, 1986, pp. 768).

**Scaffolding.**

Scaffolded instruction is cognitive development that is mediated by experts providing information to novices, with provision of expert support gradually diminishing as pupil competence increases (Lysynchuk, Pressley, & Vye, 1990). Adults’ use of scaffolding strategies allows young children to show advances in literacy development. Adults provide support as children need it and provide input that children can understand. With increasing age in the preschool years, children become attentive to longer sections of text; and as they gain experience, they can have more complex interactions with adults about story content (Sulzby & Teale, 1987; Pressley, 2002). High support strategies, such as reducing choices and co-participating, are valuable for promoting children’s
involvement when the task is difficult. When the task is not difficult, teachers most often use low support strategies, including generalizing, reasoning, and predicting (Pentimonti and Justice, 2010).

As mentioned, the National Reading Panel (2000) stated explicit or formal instruction was highly effective in enhancing understanding (Keene & Zimmerman, 2007) as young children are quite limited in their knowledge and cognition about metacognition and do relatively little monitoring of their own memory or comprehension (Flavell, 1979). Direct explanation focuses on the teacher’s ability to explain explicitly the reasoning and mental processes involved in successful reading comprehension. Teachers help students to view reading as a problem-solving task that necessitates the use of strategic thinking and to learn to think strategically about solving comprehension problems.

Also noted in the 2000 National Reading Panel report was Transactional Strategy Instruction. Promoting explicit instruction, it emphasized the ability of teachers to facilitate student discussions in which students collaborated to form joint interpretations of text and acquire a deeper understanding of the mental and cognitive processes involved in comprehension. These deep structure interactions are the basis for this body of research. Deep structure interactions between teachers and children include: constructing meaning at the whole-text level, determining importance, creating mental images, relating the new to the known (schema), questioning, and inferring. Surface structure systems are skills that help readers and writers identify words and read fluently.

Comprehension is involved in reading as well as in listening. The main difference between reading and listening occurs at surface structures when the decoding process is
automated (Kintsch and van Dijk, 1978). Kintsch (1980) described these surface structures as microlevel, while the deep structure interactions were on the macrolevel. The comprehender’s goals are to make schema explicit and generate recall and summarization (Kintsch & van Dijk, 1978). A text may be recalled and summarized adequately if a microlevel, or textbase, is constructed. However, in order to move beyond a superficial level, the comprehender must have knowledge about the topic and form a model that fills in the information necessary for understanding that was not made explicit in the text (Kintsch, 1994). Knowledge about the topic, expectations that are generated during reading, and how a text can be organized in a coherent manner are three factors that determine cognitive interest and serve as motivation for reading and comprehending (Kintsch, 1980).

As previously stated, explicit teaching strategies are most effective in helping a comprehender reach his/her goals. Keene (2008) believes the five tactics for teaching deep structure comprehension are thinking aloud, modeling, demonstrating, conferring, and informal interactions and sharing (see Table 5). The most effective teachers take time to understand the strategies in their own reading, incorporate instruction into predictable and structured workshops, and ask children to apply the strategies in a wide variety of texts and levels (Keene, 2002).
### Table 5
Tactics for teaching deep structure comprehension

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Teachers</th>
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<tbody>
<tr>
<td>Thinking Aloud</td>
<td>• Read aloud, pausing to make their thinking explicit.</td>
</tr>
<tr>
<td>How do readers and writers think?</td>
<td>• Clear about how the strategy they’re using helps them comprehend more than they would have comprehended without the strategy.</td>
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<td></td>
<td>• Work to ensure precision in their think-alouds, focusing on the most far-reaching use of the strategy, resisting the urge to think aloud about the most obvious content or new vocabulary in the text.</td>
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<tr>
<td>Modeling</td>
<td>• Describe their lives as readers and writers - where and when they like to read, how they choose books, what they prefer in relation to author’s style, content, and genre.</td>
</tr>
<tr>
<td>How do readers and writers behave?</td>
<td>• Help students develop and describe their own preferences.</td>
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<td></td>
<td>• Create a classroom environment conducive to in-depth learning. There are spaces conducive to group work, independent work, and small-group discussion; books are accessible; records of children’s thinking and group ideas line the walls.</td>
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<tr>
<td></td>
<td>• Ensure that learning experiences are authentic - that what they ask students to do in class is something readers actually might choose to do outside of school.</td>
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<tr>
<td>Demonstration</td>
<td>How do readers and writers interact?</td>
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<td></td>
<td>Demonstrate or help students show how readers deepen comprehension via oral, written, artistic, or dramatic means.</td>
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<td></td>
<td>• Set up “walk through” demonstrations in which students enact the processes of obtaining resources and materials in the classroom or transition from one activity to another.</td>
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<td></td>
<td>• Walk students through demonstrations showing how book clubs, think-pair-share, turn and talk, and other interactive sequences work in the classroom.</td>
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<tr>
<td></td>
<td>• Show through “fish bowl” types of demonstrations how students can build on other students’ thoughts in discussion and how they can use “open forum,” in which the whole group converses about a book or idea.</td>
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<table>
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<tr>
<th>Conferring</th>
<th>How do readers and writers reach beyond their current work?</th>
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<tbody>
<tr>
<td></td>
<td>• Ensure ample time every day to confer with students during independent work time.</td>
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<td></td>
<td>• Make decisions about which children need shorter, more frequent conferences and which will benefit from less frequent, more in-depth conferences.</td>
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<td></td>
<td>• Ask each student to reflect on his or her growth as a reader in each conference.</td>
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<tr>
<td></td>
<td>• Build on each child’s strengths and progress; they make clear, well-documented decisions about what to teach next in the context of the conference.</td>
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<td></td>
<td>• Are explicit about how the strategy or skill discussed in a conference can be generalized beyond the current context.</td>
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<tr>
<td></td>
<td>• Invite students to share new insights during reflection sessions.</td>
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Managing Sharing Opportunities
How do readers and writers teach others?

- Encourage students not only to share, but also to teach others what they have attempted in their reading.


Researchers have conceptualized classroom instruction across four dimensions: (a) explicit versus implicit, (b) teacher-managed versus child-managed, (c) word level versus higher order, and (d) change over time. Explicit activities focus the child’s attention on constructing meaning, and implicit activities do not, such as book discussions and students reading and writing independently. Teacher-managed instruction means the teacher is managing the learning, whereas in child-managed, the child is responsible for his/her own learning. Word-level activities include alphabet and sound identification, and higher order activities include reading comprehension and vocabulary learning. Change over time is the instructional practice over the course of the school year (Connor, Morrison, & Katch, 2004; Connor, Morrison, & Petrella, 2004).

Connor, Morrison, and Katch (2004) found that children with weaker fall decoding skills achieved greater decoding growth in classrooms with more teacher-managed explicit decoding instruction. Children with stronger vocabularies achieved stronger decoding skill growth in classrooms with many opportunities for independent reading and writing activities, whereas children with weaker vocabulary skills achieved stronger decoding skills when opportunities for independent reading and writing were kept to a minimum in the fall and gradually increased as the year progressed. Teacher-managed implicit activities, such as discussions about books and teachers reading to students, did not have an effect on children’s decoding skills growth. However, such
activities are important for reading comprehension growth and emerging attitudes toward reading. “It is reasonable to infer that explicit decoding instruction would have an indirect impact on children’s reading comprehension growth; however, instructional activities explicitly focusing on reading comprehension may have a greater effect” (Connor, Morrison, & Katch, 2004, pp. 328). The synthesis of research from the National Reading Panel advocated for the explicit teaching of comprehension strategies as well, and this study lends further support for the need to directly instruct students with developing skills.

Connor, Morrison, and Petrella (2004) observed third graders, and they found the amount and type of instruction influenced children’s fall reading comprehension skills. Children with average to below-average reading skills in the fall achieved greater growth on average in classrooms with more time spent in teacher-managed explicit instruction. Although beneficial, about one minute per day of language arts time was spent on explicit instruction in reading comprehension strategies. However, children were provided substantial scaffolded opportunities to practice using comprehension strategies and to examine the spoken language. Also, child-managed reading comprehension activities, without teacher involvement, were found to negatively affect reading comprehension growth.

The National Reading Panel (2000) suggested question answering and question generating in the natural learning environment for increasing comprehension, and Morrow’s (1984) work shows an increase in kindergarteners’ comprehension when stories were read aloud. One way early childhood educators can assist with questioning is providing young children with an organizational strategy for dealing with the information
from the content and structure of a story read to them. This could improve listening comprehension and may be transferable to new stories (Morrow, 1984). The Directed Reading Activity (DRA) uses a sequence of steps to give direction to the reader in order to provide him/her with a strategy for organizing material when reading. When used by a teacher with non-readers, the students asked traditional questions, structural questions, or a combination of both and showed improved comprehension scores compared to students who did not receive the pre- and post-questioning and discussion format. Since children did not receive instruction on the post-test stories, Morrow was also able to conclude the newly acquired knowledge was transferrable. Furthermore, the effects lasted over a period of time (Morrow, 2004).

Book reading provides a context for teachers to scaffold students’ knowledge building and assessing students’ learning through questioning. More cognitively challenging activities and questions include making inferences, reasoning, giving factual information, providing clarification, and anticipating future events. This may develop children’s abstract cognitive skills that lead to self-questioning necessary for comprehension development of mature readers (Massey, Pence, Justice, & Bowles, 2008). If children are to develop into mature readers, they need space to elaborate, evaluate, and analyze during group discussion. In interactive readings, prediction questions prove excellent for generating conversation and for modeling how a reader uses information from past experiences to make inferences about a new story, particularly among at risk students (Klesius & Griffith, 1996).

Children’s participation in discussion is highly correlated to the teacher’s participation at the level of cognition. However, there was a negative correlation between
Thinking strategies during interactive book reading

In another study, commenting by adults contributed to a greater percentage of child utterances regarding the story meaning while questioning by the adults contributed to a greater percentage of child utterances about the story structure and print (Kertoy, 1994).

Another correlation exists between children and adults’ representation of storybook events. Danis, Bernard, and Leproux (2000) found the level of abstraction a partner adopted depended on the level that the other partner expressed. Adults raised the level of abstraction more often than children, creating a zone of proximal development. Thus, adults stimulated the children’s abilities, since research showed the children followed the adult to a higher level of abstraction. This raised the children’s cognitive competencies and deepened their responses to text. Zucker, Justice, Piasta, and Kaderavek (2010) showed that preschool children produced significantly fewer inferential utterances than literal utterances overall. However, they observed a strong positive association between inferential teacher questioning and inferential child responses. Likewise, they found that literal teacher questions were very unlikely to elicit inferential child responses, and inferential teacher questions were unlikely to elicit literal child responses. Further, Walsh and Blewitt (2006) looked at adult questioning on children’s novel word acquisition and learned comprehension increased more with vocabulary eliciting questions and non-eliciting questions suggesting children’s active engagement in discussion about novel words in general is important to word learning.

When participating in book reading, Zucker et al. (2009) found that 80% of preschool children’s interactions occurred at literal levels – their responses did not
Thinking strategies during interactive book reading

deepen thinking, the children merely retold information from the books. Immediate and easy responses from students only indicate involvement at the surface level. Developing children’s ability to get to a deeper, more meaningful level takes time and effort. Teachers need to skillfully deal with responses, aiming to get children to explain, elaborate, and connect their ideas. The importance of prompting children to interact with text, organize their thoughts and produce language is essential to making sense of decontextualized language. The comprehension of such language is a major source of learning and at the center of academic achievement (McKeown & Beck, 2006).

Thinking Strategies.

Thinking strategies enable children to think with deeper understanding. They are related to reading comprehension, and include summarization, prediction, and inferring word meanings from context. Explicit teaching ensures children learn to create meaning naturally and subconsciously as they read, far earlier than in the past (Allington, 2001; Keene & Zimmerman, 2007), as young children are quite limited in their knowledge and cognition about metacognition and do relatively little monitoring of their own memory or comprehension (Flavell, 1979). If provided the instruction, early elementary children develop in their ability to think about their own approach to comprehension and become increasingly able to apply thinking strategies as they read (Duke & Carlisle, 2011). There is not a consensus as to which strategies are most effective for which age groups or the order in which they should be taught. However, Keene and Zimmerman consider that monitoring for meaning is the “umbrella” under which other strategies fall. Each strategy is a type of monitoring, and students must be metacognitive - attentive to their thinking
processes - as they consider text. The following table details the thinking strategies used by proficient learners and the skills that make each strategy visible.

Table 6  
Thinking Strategies used by proficient learners

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Readers</th>
</tr>
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| Monitoring Meaning and Comprehension         | • They know when the text they are reading or listening to makes sense, when it does not, what does not make sense, and whether the unclear portions are critical to overall understanding of the piece.  
• Identify ways in which a text gradually becomes more understandable.  
• They check, evaluate, and make revisions to their evolving interpretation of the text while reading.  
• Identify confusing ideas, themes, and/or surface elements and can suggest a variety of different means to solve the problems they have.  
• Aware of what they need to comprehend in relation to their purpose for reading.  
• Learn how to pause, consider the meanings in text, reflect on their understandings, and use different strategies to enhance their understanding. |
Using Prior Knowledge – Schema

- Spontaneously activate relevant, prior knowledge before, during, and after reading text.
- Assimilate information from text into their schema and make changes in that schema.
- Use schema to relate text to their world knowledge, text knowledge, and personal experience.
- Use their schema to enhance their understanding of text and to store text information in long-term memory.
- Use their schema for specific authors and their styles to better understand text.
- Reorganize when they have inadequate background information and know how to create it.

Asking Questions

- Spontaneously generate questions before, during, and after reading.
- Ask questions for different purposes.
- Use questions to focus their attention on important components of the text.
- Are aware that other readers’ questions may inspire new questions for them.
### Drawing Inferences

- Use their schema and textual information to draw conclusions and form unique interpretations from text.
- Make predictions about text, confirm their predictions, and test their developing meaning as they read on.
- Know when and how to use text in combination with their own background knowledge to seek answers to questions.
- Create interpretations to enrich and deepen their experience in text.

### Using Sensory and Emotional Images

*Create sensory images during and after reading.*
- Use images to draw conclusions and to create unique interpretations of the text.
- Use their images to clarify and enhance comprehension.
- Use images to immerse themselves in rich detail as they read.
- Adapt their images in response to the shared images of other readers.
- Adapt their images as they read to incorporate new information revealed through the text and new interpretations they develop.
### Determining What is Important in Text

- Identify key areas or themes as they read.
- Distinguish important from unimportant information in relation to key ideas or themes in text.
- Utilize text structures and text features to help them distinguish important from unimportant information.
- Use their knowledge of important and relevant parts of text to prioritize in long-term memory and synthesize text for others.

### Synthesizing Information

- Maintain a cognitive synthesis as they read.
- Retell or synthesize in order to better understand what they have read.
- Capitalize on opportunities to share, recommend, and critique books they have read.
- May respond to text in a variety of ways, independently or in groups of other readers.
- Likely to extend the literal meaning of a text to the inferential level if the reader is proficient.


Lynch, VanDenBroek, Kremer, Kendeou, White, and Lorch (2008) looked at the narrative comprehension ability of preschool and early elementary students. To fully comprehend a narrative, children must understand and encode the individual events in the story and connect different parts of the narrative. This requires sensitivity to the structure of narratives, the ability to make inferences, and the ability to access background
knowledge about a great variety of situations and facts. After watching short audio-visual narratives, four to six year old children can recall events with more causal connections and show an understanding of narrative structure in their correct answers to questions. By five years old, children are able to tell narratives with simple, coherent episodes and draw connections between a character’s actions and his motivations. These are the same skills children will use as they begin to comprehend what they read in a traditional sense.

Further, the ability to understand explicit and implicit information develops from four to six years of age, although explicit information was understood and remembered better. This shows an early stage of comprehension ability (Florit, Roch, & Levorato, 2011). Inferential skills are related to understanding explicit and implicit information; therefore, preschoolers are able to make inferences as a strategy in listening text comprehension even if it extends beyond their receptive vocabulary and verbal intelligence. Inference making at this age makes an indirect contribution to later narrative listening comprehension by significantly contributing to vocabulary knowledge (Lepola, Lynch, Laakkonen, Silven, & Niemi, 2012). In regards to the specific populations of this study, although the body is research is small, it is known that preschoolers with language delays have poorer inferential language skills and are exposed to fewer inferential language opportunities and book reading at home than typically developing peers (vanKleek, 2006).

Another comprehension strategy, children’s use of schema, was studied by Torr (2007). As defined in her work, *intertextuality* is the manner in which the overall meaning of any text is shaped by its relationship to other texts and the sociocultural context in which it is embedded. In 1983, Heath demonstrated literacy-oriented
professional parents encouraged their preschool children to relate their lives to characters, thus fostering the ability to decontextualize, hypothesize, and predict. Interactive reading is one avenue teachers and parents encourage explicit intertextual connections.

There is limited research on the strategies used by early readers. However, Brenna (1995) found a small group of four to six year old children, who were reading fluently prior to formal instruction, utilized metacognitive strategies. In addition to describing the strategies used, all five chose strategies relative to their task and situation. Exhibiting knowledge of self, the readers made decisions about what and how they read, thus modulating their own zone of proximal development. All five also treated reading as an active, problem-solving process in determining word meaning. They used rereading, prediction, cues, and links to personal experiences and prior knowledge (Brenna, 1995). It is worthy of note that the children’s primary caregivers all emphasized reading as a problem-solving process and encouraged the children to use a variety of techniques.

**Inclusive Special Education Classrooms**

Since passage of the Education for All Handicapped Children Act (P.L. 94-142) and Individual with Disabilities Education Act, public schools have sought to create a “least restrictive environment” for students with special education needs. With the proper modifications and accommodations, the general education classroom has been dubbed this environment.

In this environment, children with special needs have more opportunity to develop valuable skills when they spend time among a group of typically developing children. They demonstrate increased levels of appropriate social play and initiate social interactions more frequently. They also gain in self-help skills, language development
and cognitive and motor skills, and are better able to participate in a classroom community. Typically developing children gain awareness of the needs of others when they are members of an integrated classroom. They include others in play and learn that a person who looks or behaves differently is not frightening (Dickson, 2000).

The current educational system is a relationship between school culture and inclusion (Zollers, Ramanthan and Yu, 1999). The key features of the inclusive culture are inclusive leadership, a broad view of school community and shared language and values. Combined, these features create an environment in which inclusion is not merely a program model, but a way of thinking.

Children with disabilities, including many who have language and learning disabilities, often display expressive and receptive communication difficulties, are less engaged in social interactions than their general education counterparts, and tend to experience greater difficulty with conversation (Berry and Englert, 2005). Even high-functioning students, such as those with Asperger syndrome, have abilities masked by their profound challenges in the ability to use language effectively during real-life social situations. The latter capacity relies on sophisticated social monitoring skills, the ability to appreciate other’s intentions, and the ability to adhere to social conventions or cultural norms (Rubin and Lennon, 2004).

Language serves a fundamental role in interpersonal contacts, relationship formation, regulation of interactions, and the socialization of children (McCabe and Meller, 2004). For many, preschool is the first environment in which children form relationships and interpersonal contacts in a school setting. Vygotsky suggests all students can benefit by working with peers. The theory of the zone of proximal
development states there is a difference between what a student can do independently and what s/he can do with assistance from others. General education and special education students can benefit through cooperative learning. Cooperative learning establishes inclusion, creating a learning atmosphere in which learners feel respected and connected to one another. It creates a strong social support system.

**Inclusion.**

The Association for Supervision and Curriculum Development defines inclusion as the practice of educating all or most children in the same classroom, including children with physical, mental, and developmental disabilities. The 1975 Education for All Handicapped Children Act (P.L. 94-142) required a free and appropriate education with related services for each child in the least restrictive environment possible, and an Individualized Education Program (IEP) for each qualifying child. In 1991, the bill was renamed the Individuals with Disabilities Education Act (IDEA), and the revision broadened the definition of disabilities and added related services.

A number of arguments in favor of the inclusion of preschool children with disabilities with typically developing peers have been advanced and have been summarized along four dimensions (Holahan and Costenbader, 2000). First, from a legal perspective, federal legislation mandates that all children with disabilities receive educational services in a setting with, or in close proximity to, children who do not have disabilities. Second, from a moral and philosophical perspective, it is argued that children should not be segregated from their typically developing peers, because segregation is antithetical to basic human rights and has negative effects on children with disabilities. Conversely, inclusion results in positive changes in societal attitudes toward these
children. Third, the argument is made that placing preschool children with disabilities with typically developing peers has developmental and educational benefits for both groups. Finally, empirical studies have supported inclusive settings, in particular, inclusion of preschool children with disabilities has generally been found to benefit the development of social competence and play behavior.

**Language and Communication.**

It is expressing themselves through words that most students with a disability find challenging. Children with disabilities, including many who have language and learning disabilities, often display expressive and receptive communication difficulties, are less engaged in social interactions than their general education counterparts, and tend to experience greater difficulty with the pragmatics of conversational discourse (Berry and Englert, 2005).

Students with language and learning disabilities also have difficulty getting the floor to take turns to speak, giving turns to others, and using sophisticated conversational skills (e.g. avoiding interruptions and using simultaneous speech in judicious ways). They may have trouble establishing a topic that is interesting to others in the group, or in initiating or signaling shifts in topics at appropriate times. Difficulties with topic maintenance include mishandling questions, failure to add new information to the topic, difficulty following the thread of conversation as topics are introduced, reluctance to give up a topic when appropriate, and failure to connect topics and utterances with previous ones. Children with learning disabilities or specific language impairments produce less complex sentences, have word retrieval problems, fail to understand words with multiple
meanings and elicit less elaborated responses from other speakers (Berry and Englert, 2005).

Students with learning disabilities are found to be less competent in both verbal and nonverbal communication than their nondisabled peers. A number of children with learning disabilities have deficits in their conversational abilities, are burdened by a lack of linguistic sophistication, and tend to misinterpret the subtleties of spoken language. These conversational deficits may include a failure to understand and appropriately respond to humor and sarcasm, especially if slight sound changes result in more than one possible meaning, as well as problems with pragmatics in both receptive and expressive language (Moisan, 1998).

Children with learning disabilities frequently exhibit deficits in nonverbal communication as well. The social deficits of learning disabled children consist of the following three components (Moisan, 1998): (a) problems perceiving, decoding and interpreting social cues; (b) difficulty selecting an appropriate response; and (c) an inability to appropriately enact the correct social response. Studies show that more than 80 percent of children with learning disabilities are less able to understand various aspects of nonverbal communication than their nondisabled classmates. Children with learning disabilities also have difficulty interpreting social events and experience problems in choosing subsequent actions that depend upon such interpretations. Many students with learning disabilities misread nonverbal communication, and these students often misinterpret nonthreatening interpersonal cues as being aggressive.

Vulnerabilities in the social use of language are at the core of social learning disabilities and are evident in children and adolescents with high-functioning autism and
Asperger syndrome. Notable vulnerabilities include: providing relevant remarks in response to the topic initiations of others, providing appropriate expansion comments, requesting information to maintain the conversational exchange, and providing essential background information (Rubin and Lennon, 2004).

In contrast to the prototypical child with autism, children and adolescents with Asperger syndrome often present with a conversational style marked by verbosity, as opposed to passivity. Topic initiations, however, tend to be quite long-winded and one-sided, with little opportunity for a shift in topic or integration of a conversational partner’s perspective (Rubin and Lennon, 2004). The relative interest of a conversational partner is often disregarded. In addition, conversational partners often find it difficult to follow the conversational lead of an individual with Asperger secondary to the limited provision of background information and frequent inclusion of tangential comments.

As children and adolescents with high-functioning autism or Asperger syndrome mature, they often develop relatively sophisticated, if not precocious, language abilities. These abilities, however, often mask profound challenges in the ability to use language effectively during real-life social situations. This latter capacity relies on sophisticated monitoring skills, the ability to appreciate another’s intentions, and the ability to adhere to social conventions or cultural norms. Social and communication challenges, in fact, significantly contribute to a notable discrepancy between cognitive potential, as demonstrated on standardized IQ tests, and adaptive functioning, as demonstrated by the ability to meet the demands of the routines and interactions that occur in everyday life (Rubin and Lennon, 2004).
Whitaker (2004) observed 10 autistic students during 20-30 minute play sessions. He found a statistically significant difference in the earlier to latter play sessions of the autistic youngsters. Although this was an encouraging result, it needs to be emphasized that this was an increase from a very low baseline. By the final session, youngsters with autism were spontaneously requesting of their peers in only 10 percent of the intervals coded. Communication for other purposes remained exceptionally rare, although there was an increase in the frequency of “commenting,” where the youngster with autism typically labeled some aspect of the immediate situation or activity, but without an apparent intention to communicate to another person. Whitaker also found no change in the level of joint attention behaviors produced by the youngsters with autism. Showing, giving, and other forms of verbal and non-verbal direction of a partner’s attention remained at a consistently low level, occurring in just under 5 percent of the coded intervals.

Social Integration.

Construct definitions of social competence typically include interpersonal communication and/or language as a necessary component. Language serves a fundamental role in interpersonal contacts, relationship formation, regulation of interactions, and socialization of children.

The importance of inclusive preschool programs cannot be denied, as one of the main purposes of preschool programs is socialization (Vakil, Freeman and Swim, 2003). Research has indicated that social and adaptive skills of children with disabilities improve in inclusive settings. Inclusion has been especially advocated during the preschool years, because young children have not formed negative stereotypes about individuals yet, thus
minimizing the possibility of teasing and rejection and maximizing the possibility of social acceptance of students with disabilities (Holahan and Costenbader, 2000).

A peer culture is a stable set of activities or routines, artifacts, values, and concerns that children produce and share in interaction with their peers. There is an importance of peer culture in preschool, where it is assumed that children learn various things from each other: cognitive skills, in the sense that children can reconsider their own thoughts and conceptions in collaboration with peers, and also social skills, in the sense that learning from peers improves children’s ways of communicating and leads to a deeper sense of other individuals’ conceptions and perspectives (Williams, 2001).

The opportunity for children to learn through peer modeling and interaction is a primary rationale for inclusion and integration in early childhood programs. However, social integration will not occur spontaneously for children with moderate and severe handicaps. Therefore, programs that include children with moderate to severe disabilities must take specific steps to promote social integration.

Social integration has two aspects: (a) physical proximity of children with disabilities and their nondisabled peers, and (b) social interaction between children. Physical proximity occurs when two or more children are in the same activity area or within the same group in a teacher-directed instructional area. Proximity is facilitated when activities and play areas are designated to accommodate a small group of children. Additionally, adults need to provide duplicate sets of materials and space for several children to participate. For example, in a dramatic play area, teachers can facilitate participation in a small group by setting out two or three baby dolls and accessories instead of one, and by making sure there is adequate space in the area for several children.
to play. Social interaction can then be promoted using adults and peer mediation strategies (Cavallaro and Haney, 2004).

Peers play an important role in the development of language by providing opportunities for establishing and practicing language skills, role modeling, providing natural consequences, and offering feedback. The ability to initiate conversation appropriately, contribute to ongoing conversations, communicate intentions clearly, present more positive than negative comments, address all participants when joining a group, and make adjustments in communication to suit the listener’s needs have all been related to ratings of school-age children’s peer acceptance and sociometric status ratings (McCabe and Meller, 1993).

To facilitate the social integration of children with disabilities, materials that are conducive to social play and cooperation should be emphasized. Materials that have been found to be conducive to social play and cooperation (as opposed to solitary play) include dramatic play materials, such as dress-up clothes with a mirror; tea sets; dolls; blocks; outdoor climbing equipment; tricycles; and wagons. Manipulative and art materials can be conducive to parallel play, especially when duplicate sets are provided (Cavallaro and Haney, 2004).

Level of functioning may partially determine the amount of social interaction children have with peers, thus affecting social growth as well as growth of other developmental skills. A study found that higher functioning children (typically developing or with mild disabilities) interacted more with typically developing peers or with peers who had mild disabilities than with their less advanced peers, while lower functioning children interacted equally with all peers. It was concluded that higher
functioning children are better able to adjust the competency of their communication to the level of the listener (Holahan and Costenbader, 2000).

**Conclusion**

The interactive book read aloud is a dynamic interaction between the reader, text, and teacher. When taking place during a classroom event that allows for interaction through dialogue scaffolded by a teacher, the participating children can experience gains in higher order thinking. In facilitating these conversations, the teacher plays a pivotal role in developing the language and thinking strategies of the children. General education and special education preschool students are capable of thinking at higher levels when provided the supports of time, engaging interactions, and explicit instruction. Preschool is an ideal time for early intervention, and programs have shown academic and social benefits that extend to adulthood.

The purpose of this study was to investigate children’s use of thinking strategies in inclusive preschool classrooms during whole group interactive reading time as it related to their responses to deep structure questions. Further, this study investigated the use of thinking strategies among the general education and special education populations in the classrooms.

This study built upon prior investigations to include a targeted look at children and their use of thinking strategies when responding to deep structure questions asked during and after interactive book read alouds. The use of thinking strategies by general education and special education preschool children to increase their comprehension is something not yet explored.
Purpose

The purpose of this study was to investigate children’s use of thinking strategies in inclusive preschool classrooms during whole group interactive reading time as it related to the children’s responses to deep structure questions. Further, this study investigated the use of thinking strategies among the general education and special education populations in the classroom. Therefore, the belief that general education and special education preschool children are capable of deep structure comprehension when supported by teachers guided this research. To that end, this study looked to answer the following:

1. Which thinking strategies did preschool students use when they respond to deep structure questions?

2. Did general education students and special education students use different thinking strategies when responding to deep structure questions?

The thinking strategies are: monitoring meaning and comprehension, using prior knowledge (schema), asking questions, drawing inferences, using sensory and emotional
images, determining what is important in text, and synthesizing information (Keene & Zimmerman, 2007).

**Participants**

**Inclusive Preschool Classrooms.**

The two inclusive preschool classrooms in the study were housed in two separate elementary schools in a large Midwestern city. The inclusive classrooms were known as a community-based program by the school district. According to the Early Childhood Coordinator, the program was in its 15th year; however, 2012-2013 was the ninth year of the programmed classrooms and coordinator (E. Sheppard, personal communication, November 26, 2012). General education students were enrolled following an application, and special education students were enrolled following their third birthday. Children were placed into one of three classrooms (three different school sites) based upon home schools and transportation boundaries. As classes filled, however, children filled any open slot. Teachers followed the Foundations to the Indiana Academic Standards for Young Children to guide curriculum and assessment, and individualized education plans’ goals and objectives were aligned to the Foundations.

Families with general education children paid a materials and tuition fee. The materials fee was $90. If a child attended one day per week, the cost was $60 per month. If the child attended two days per week, the cost was $120 per month. If the child attended three days per week, the cost was $180 per month. If the child attended four days per week, the cost was $240 per month. Families with special education children paid only the materials fee, as early intervention services are free.
Teachers.

The two participating teachers in this study worked in separate classrooms serving three to five year old children, and both classrooms were inclusive with eight general education and eight special education students.

The first teacher, Chrissy*, was a 42-years-old Caucasian woman. This was her 17th year teaching, seventh in her current position. Her highest degree attained was a masters’ degree. The second teacher, Trisha, was a 44-year-old Caucasian woman. This was her 22nd year teaching, ninth in her current position. Her highest degree attained was a bachelor’s degree.

Children.

All children in the two classrooms were invited to participate, and informed consent and FERPA authorization were obtained from the children’s guardians. The principal researcher also obtained child assent from the participants.

Following approval, 18 children (10 boys; 8 girls) enrolled in the study from the two classrooms. Of the total, 11 were general education students (4 boys; 7 girls) and 7 were special education students (6 boys; 1 girl). Of the special education population, one (14%) was diagnosed with an orthopedic impairment, two (29%) were diagnosed as other health impaired, one (14%) was diagnosed with autism, and three (43%) had a developmental delay. Children’s ages in November 2012 ranged from 46 to 68 months (M=55, SD=7). Seventeen were Caucasian (94%) and one was multi-racial (6%). All children (100%) spoke English at home. Of the total students, 13 (72%) had previous preschool experience, and five (28%) did not prior to the 2012-2013 school year.

* All student and teacher names have been changed to maintain confidentiality.
The demographic information for the children in the study was found in the cumulative folders kept by the school to which the researcher was granted access by virtue of guardian informed consent and FERPA authorization. Upon enrollment, guardians complete a language survey that details the languages spoken in the home. The enrollment form also contains the child’s birthdate and ethnicity. Special education students were identified by the presence of an individualized education plan in their cumulative folder.

**Sampling.**

The teachers were selected from a sample of convenience. To be eligible to participate, teachers were required to be employed in the school setting in which the study took place and teach an inclusive preschool classroom.

As this present study was a convenience sample, some populations were not represented. These populations included teachers in a general education preschool class or self-contained preschool class, male teachers, teachers without 4-year college degrees, and teachers in suburban and rural settings.

The students were selected in a sample of convenience, as they were from the sample teachers’ classrooms. To be eligible to participate, students were enrolled in one of two inclusive classrooms in the study that took place at the schools. As this was a convenience sample, some populations were not represented. These populations included students in a general education class or self-contained class, and students in suburban or rural settings.
Research Design

Thinking Strategy.

In this study, children’s use of thinking strategies - comprehension strategies that allow children to think with deeper understanding (Keene & Zimmerman, 2007) - were measured by the principal researcher through direct observation. Eight read-alouds were conducted in each classroom, and four of the read-alouds (1st, 3rd, 5th, and 8th) were video recorded. The recordings were transcribed, and the children’s responses were tallied for each thinking strategy as defined by Keene and Zimmerman (2007): monitoring meaning and comprehension, using prior knowledge – schema, asking questions, drawing inferences, using sensory and emotional images, determining what is important in the text, and synthesizing information. The researcher looked for “what readers do” as defined in Table 6 to tally each strategy.

General Procedures.

In the fall of the 2012-2013 academic year, teachers were given eight books to read to children in their inclusive classes. The selected books were written and illustrated by Mo Willems. Willems was selected, because he is a Caldecott Medal-winning illustrator, and his book are frequently used by teachers for author and illustrator studies. The read alouds took place on eight consecutive Mondays during the opening circle time or closing circle time. The teachers were permitted to select which time they preferred prior to the study, as the children heard stories during both time periods. Chrissy elected to conduct her read alouds during the opening circle time, and Trisha selected the closing circle time.
In the first reading, teachers were not instructed to use a particular questioning style. In not providing questions for the first book, this researcher was able to obtain a baseline for the number of deep structure questions used by classroom teachers prior to being provided solely higher order questions. Additionally, this researcher was also able to obtain a baseline for the number of thinking strategies used by the children prior to the intervention. However, for the following seven readings, deep structure questions were provided to the teachers for their instruction. The questions were based upon tactics for teaching deep structure questions (Table 5), thinking strategies used by proficient learners (Table 6), and levels of abstraction (Blank, Rose, & Berlin, 1978). These were the only questions asked before, during, and after the read-alouds in which student responses were tallied. Interactive reading sessions No. 1, No. 3, No. 5, and No. 8 were observed and video recorded by this researcher, although the researcher was present for all readings. Being present for all readings allowed the researcher to ensure treatment fidelity.

The video recordings from the four observed read alouds were transcribed, and the children’s responses were coded for each thinking strategy defined by Keene and Zimmerman (2007): monitoring meaning and comprehension, using prior knowledge – schema, asking questions, drawing inferences, using sensory and emotional images, determining what is important in the text, and synthesizing information. The researcher looked for “what readers do” as defined in Table 6. Frequency of responses was calculated to ascertain the thinking strategies used most often by the children. The responses of general education and special education students were evaluated by looking at frequency of response. General education students were coded with red, and special education students were coded with blue.
Operational Definitions.

There were two controlled variables, something that is constant and unchanged. For this study, the controlled variables were book selection and teacher questions provided by this researcher, which followed the first read aloud.

The dependent variable was the children’s use of thinking strategies. Specifically, this study looked at the thinking strategies used most often by the children before, during, and following read alouds and the comparison of thinking strategies used by general education and special education students.

Procedures

The two teachers were selected in a sample of convenience, and the students were members of their inclusive preschool classrooms in a classroom in an urban setting. For the first read aloud, the two teachers read aloud Don’t Let the Pigeon Drive the Bus (Willems, 2003) to their classes. The teachers were not instructed to use a particular questioning style during the first read aloud. This researcher observed and video recorded the read aloud session. Following the read aloud, this researcher transcribed the read aloud sessions and coded each student response for thinking strategy usage. Red was used for general education students, and blue was used for special education students.

For the seven following weeks, the teachers read a book by Mo Willems and used a protocol of deep structure questions created by this researcher. The teachers read in order: Don’t Let the Pigeon Drive the Bus (2003), The Pigeon Finds a Hot Dog (2004), Don’t Let the Pigeon Stay Up Late (2006), The Pigeon Wants a Puppy (2008), The Duckling Gets a Cookie (2012), Knuffle Bunny: A Cautionary Tale (2004), Knuffle Bunny Too: A Case of Mistaken Identity (2007), and Knuffle Bunny Free: An
Unexpected Diversion (2010). The teachers asked the questions provided to ensure they were asking deep structure questions. The teachers were permitted to ask additional questions; however, only student responses to the researcher-provided questions were tallied. The first, third, fifth, and eighth shared read alouds were observed and video recorded. Following the read alouds, this researcher reviewed the video recordings to ensure the teachers utilized the deep structure questions and tally coded each of the children’s responses for thinking strategy as defined by Keene and Zimmerman (2007): monitoring meaning and comprehension, using prior knowledge – schema, asking questions, drawing inferences, using sensory and emotional images, determining what is important in the text, and synthesizing information. The researcher looked for “what readers do” as defined in Table 6 to maintain consistency in tallying.

Data Analysis

Data were analyzed with respect to the two research questions posed for this study:

1. Which thinking strategies do preschool students use when they respond to deep structure questions?

2. Do general education students and special education students use different thinking strategies when responding to deep structure questions?

To answer the first question, frequency counts were used to determine which thinking strategies were used by all preschool students in the classrooms when they responded to deep structure questions. To answer the second question, an independent sample T-Test on the usage of schema, making inferences, and determining importance across all four readings was run to determine if the two groups differed in their
implementation. Results of the data analysis indicated the extent to which the intervention impacted the children’s thinking strategies and which thinking strategies were used most often. The results of the data analysis are provided in the following chapter.
CHAPTER 4

Results

Introduction

The importance of thoughtful interactions with texts, other students, and the teacher has been shown to be important for the comprehension growth of all learners. This study built upon prior investigations to include a targeted look at preschool children and their use of thinking strategies when responding to deep structure questions asked during interactive read alouds. Holdaway (1979) described anecdotes of young children’s gradual growth in self-correction, confirmation, and prediction while they pretend-read storybooks. Although these factors could be considered early evidence of metacognition, Holdaway did not call them so (Holdaway, 1979; Cox, 1994). The use of thinking strategies by general education and special education preschool children to increase their comprehension during interactive book reading is something not yet explored.

The purpose of this study was to investigate children’s use of thinking strategies in inclusive preschool classrooms during whole group interactive reading time as it related to their responses to deep structure questions. Further, this study investigated the use of thinking strategies among the general education and special education populations
in the classrooms. The results of this study provided a descriptive look at the read alouds in two inclusive preschool classrooms, identified which thinking strategies preschool students used when responding to deep structure questions, and illustrated any differences in the strategy usage of general education and special education students.

**Guiding Questions**

1. Which thinking strategies do preschool students use when they respond to deep structure questions?

2. Do general education students and special education students use different thinking strategies when responding to deep structure questions?

**Read Aloud Descriptions**

**First Read Aloud, Classroom 1.**

In the first reading, teachers were not instructed to use a particular questioning style. In not providing questions for the first book, this researcher was able to obtain a baseline for the number of deep structure questions used by classroom teachers prior to being provided higher order questions. Additionally, this researcher was also able to obtain a baseline for the number of thinking strategies used by the children prior to the intervention. Both teachers read *Don’t Let the Pigeon Drive the Bus* (Willems, 2003).

In Chrissy’s classroom, 10 of the participating 11 students were present for the first read aloud. For all readings, the children were seated in small chairs in an arch facing the teacher. This was the formation used each day for circle time, and the teacher selected the seating assignments. Chrissy sat in a rolling desk chair, so she was able to move around the circle time space that included a calendar, weather chart, and materials for welcoming songs, such as a toy microphone.
Thinking strategies during interactive book reading

Circle time began with one student serving as the “Hello Helper.” This child walked to the others one-by-one, said “hello,” and stated their name. The others were to say “hello” back to the “Hello Helper.” Following, the whole class sang a hello song, and then a second song is sung in which all children said their full names into the toy microphone. When all children were welcomed, the read aloud took place.

Chrissy’s first read aloud, including introduction and follow-up, lasted 7:35. In the introduction, she stated the book was new and read the title. She then asked what a pigeon was. When John replied, “a bird - he flies up to the sky and then goes back to his nest,” Chrissy provided affirmation. However, when Michael said, “he flies up,” Chrissy continued to talk without recognizing his contribution. This introduction was 30 seconds.

While reading, Chrissy asked 15 questions. Most of her questions required student direct recall from the pictures. Following are examples of the teacher-student interactions:

Chrissy: “Who drives your bus?”
John: “The bus driver.”

Chrissy: “Who is it?” (pointing to pigeon illustration)
Several students: “The pigeon.”

Chrissy: “What does he see?” (pointing to bus illustration)
Several students: “A bus.”

Chrissy: “What do you think? Can he drive the bus?”
Several students: “No.”

Chrissy: “He says he’ll be careful. Should we let him?”
Several students: “No.”

Chrissy: “Do you think his cousin drives a bus?
Jimmy: “No.”
Chrissy: “I think his cousin is probably a bird. Do birds drive buses? What do birds do?”
Several students: “Fly.”

Chrissy: “Does he look happy or sad? Look at him, how do you know he’s sad?”
Brandon: “His head is like this.” (looking down)
Jimmy: “What is that?” (referencing a thought bubble)
Chrissy: “That just means he doesn’t have any thoughts.”

Chrissy: “Can he drive? No, why not? What did the bus driver say?”
Carla: “Don’t let the pigeon drive the bus.”
Jimmy: “He really wanted to drive that bus.”

Chrissy: “What does he see coming now?”
Jimmy: “A semi.”
John: “A truck.”

Chrissy: “Do you think a pigeon would really drive a bus?”
John: “No.”

Chrissy: “If a pigeon wants to go somewhere, what would he do?”
Ricky: “Fly.”

The read aloud lasted 6:10. Chrissy then proceeded to the follow-up, which ran for 55 seconds.

Chrissy: “Did you like the book?”
Jimmy: “Is he going to drive on the school bus?”
Chrissy: “We’ll see.”

Throughout the entire book event, the children used three thinking strategies – schema, inferences, and determining importance.

**First Read Aloud, Classroom 2.**

In Trisha’s classroom, all six of the participating students were present for the first read aloud. For all readings, the children were seated on the floor on a carpeted oval rug. One student who needed additional assistance sat in a small chair or with the instructional assistant. Trisha sat on the floor with the children.
Closing circle was the final activity of the day. Following snack, the children packed their backpacks and then moved to the quiet area to look at books. When everyone was ready, Trisha called the children to the rug for the read alouds.

Trisha’s first read aloud, including introduction and follow-up, lasted 19:10. The introduction was nine minutes and included a great deal of discussion about birds and explanation about pigeons. The children did not have prior experience with pigeons, and many incorrectly said a pigeon was the Caldecott Medal on the front of the book. Therefore, Trisha used the introduction to build student knowledge.

During the story, Trisha read with a lot of expression and asked fewer questions (approximately 10) compared to Chrissy. There was whole group discussion from her question about illustrations and text portraying emotion, and Trisha also prompted for expanded responses and conversation. Following are examples of the teacher-student interactions:

Trisha: “Did we find out what kind of bird this is?”
Christopher: “A pigeon.”

Trisha: “I wonder what could be making him so sad.”
Gloria: “He doesn’t get to drive the bus.”

Trisha: “Do you think they told him, ‘yes you can drive the bus’?”
Several students: “No.”

Trisha: “Why do you think he’s so mad?”
Christopher: “The bus driver still won’t let him drive the bus.”
Trisha: “How do you know he’s so mad?”
Christopher: “The letters are high.”
Trisha: “The letters are big just like our barn story. The letters got really really big when they were loud. [Gloria used her fingers to show how the text size increased with emotion.] How else do we know he is angry? Look at his beak. [Christopher opened his mouth very wide.] Look at Christopher. Do we talk loudly when our mouths are open that big?”
Thinking strategies during interactive book reading

Trisha: “Laura, how does he look now?”
Laura: “Sad.”
Trisha: “What makes you think he’s sad, Christopher?”
Christopher: “His head is like this.” (put his head down and looked at the floor)
Trisha: “Sometimes when I’m sad I put my head down.”

Gloria: “A big truck.”
Christopher: “Maybe a big dump truck.”
Trisha: “Raise your hand if you know what the pigeon might be thinking.”
Laura: “He’s trying to look.”
Trisha: “Look at what?”
Laura: “The truck.”

Trisha: “I don’t think you can see inside the truck, so I’m going to bring the book closer so you can see. What do you see in the truck?” [Trisha walked the book around the oval so each child could see.] Friends, what did you see? What was the pigeon doing?
Several students: “Driving the truck.”
Trisha: “Here we said the pigeon was thinking about the truck [referred a previous page], but he was really thinking about driving the truck.” [returned to current page]

The read aloud lasted 9:55. During the read aloud, the student who needed assistance shouted out frequently and made comments unrelated to the story. Trisha continued to read and the other children appeared unaffected by the student. Trisha then proceeded to the follow-up, which ran for 15 seconds.

Trisha: “That was a really funny book wasn’t it. Alright friends, thank you for listening.”

During the 19:10 experience, the children used four thinking strategies – monitoring meaning, schema, inferences, and determining importance.

Second Read Aloud, Classroom 1.

The second read aloud that was video recorded and transcribed took place the third week of the study, two weeks following the initial baseline. For this book, and all readings following the first, the teachers were provided a protocol with pre-, during-, and
Thinking strategies during interactive book reading

post-reading questions. The protocols were developed based upon similar guides generated by the International Reading Association, Heinemann, and Scholastic. These organizations were selected based upon their commitment to research-based practices and experience in providing professional development and classroom materials to educators. Questions contained in the protocols were designed to be deep structure questions. They were developed based upon tactics for teaching deep structure questions (Table 5), thinking strategies used by proficient learners (Table 7), and levels of abstraction (Blank, Rose, & Berlin, 1978). Teachers were instructed to allow for a five second wait time and accept responses until students were finished talking. They were to read with vocal and facial expressions and gestures, expand upon children’s utterances, and provide positive feedback.

The second read aloud video recorded and transcribed was Willems’ Don’t Let the Pigeon Stay Up Late (2006). For this reading, six pre-reading questions, 12 during-reading questions, and two post-reading questions were provided. Again, the teachers were free to ask their own questions as well, but only those included in the protocol were used to tally student responses.

The second reading in classroom No. 1 was twice as long as the first in its entirety (14:45). While the introduction in the baseline was 30 seconds, the introduction for this story was 4:15. This was a new phenomenon for the children, and many repeatedly said, “read it,” prior to Chrissy reading the book. Chrissy spent approximately 8:30 on the reading and two minutes on the follow-up.

Chrissy: “Use your schema to tell me what you know about the pigeon.”
John: “He wants to eat a hot dog.”
Thinking strategies during interactive book reading

Chrissy: “What are some things you do to get ready for bed?”
Jimmy: “I get medicine and put my pajamas on and get water.”
Michael: “I brush my teeth and rinse and spit.”
Mary: “I go potty right before I go to sleep.”

Chrissy: “I know the pigeon likes to play tricks on readers. Do you remember when he wanted us to let him drive the bus?”
Jimmy: “He flapped his wings and feathers went everywhere.”

Chrissy: “How does our friend Mo show us the pigeon is yelling?”
Ricky: “The page has that mark.”
Chrissy: “Why is he yelling?”
David: “He’s not tired and he doesn’t want to go to sleep.”

Chrissy: “We made a picture in our minds of sleepy eyes before we started reading. Do Mo’s pictures match the pictures you made?”
Ricky: “He’s yawning again.”
Michael: “There’s a lot of Zzzz.”

Chrissy: “What do we remember about the pigeon and hot dogs?”
Jimmy: “He didn’t want to share, but then he did.”
Chrissy: “It is important to share things to be nice.”
Ricky: “And then we will be friends.”

Chrissy: “I wonder what this pigeon will do next time we see him. I can’t wait to find out.”
John: “Maybe he’ll try to trick us again.”
Chrissy: “Maybe you’re right. I don’t know.”
Michael: “The pigeon will try to go on a racecar.”
Chrissy: “We’ll have to wait to find out. Bye pigeon.”

Throughout the entire book reading event, the students used five thinking strategies – monitoring meaning, schema, inferences, mental images, and determining importance. However, because Chrissy ended circle time following the book, the language and discussion did not carry over to the next activity.

Second Read Aloud, Classroom 2.

While the students in classroom No. 1 were not accustomed to the longer reading, the children in classroom No. 2 had experience with longer readings, as evidenced in
Chart 5. Trisha’s introduction was nearly six minutes, the reading was 14 minutes, and
the follow-up was 1:20 for a total time of 22:01.

Trisha: “What do you think happens when mommies and daddies stay up late?”
Christopher: “They read their Bibles.”

Trisha: “Why can’t the pigeon stay up late?”
Kara: “His mommy and daddy won’t let him.”
Trisha: “Is there a parent in the pigeon’s house?”
Kara: “Yeah.”

Trisha: “What do you do to get ready for bed?”
Christopher: “Put pajamas on.”
Laura: “I wash my hands and brush my teeth.”

Trisha: “Remember when he wanted us to let him drive the bus?”
Kara: “He drove the truck instead.”

Trisha: “Have you ever asked your mommy and daddy many times for something?”
Barry: “Make up.” (Barry received lots of prompts to participate in each
discussion. During this reading, he often repeated the responses of others, as was
the case here.)
Christopher: “Boys don’t wear make up.”
Trisha: “Well, sometimes they do.”

Trisha: “Why didn’t the pigeon want us to see him yawn?”
Kara: “Because he doesn’t want to go to bed.”
Laura: “If you yawn you’re sleepy and have to go to bed.”

Trisha: “How does our friend Mo show us the pigeon is yelling?”
Laura: “Because he’s yelling.”
Christopher: “The words are big words.”
Trisha: “Why do you think he’s mad?”
Gloria: “Feathers.”
Trisha: “There are feathers everywhere.”

Trisha: “Why is it important to get lots of sleep?”
Christopher: “So you don’t feel crabby.”
Trisha: “Yes, so you don’t feel crabby and are healthy.”

During the 22:01 read aloud, the students used five thinking strategies as well—
monitoring meaning, schema, inferences, mental images, and determining importance.
However, because it was the end of the day and time for dismissal, the language and discussion did not carry over to the next activity.

**Third Read Aloud, Classroom 1.**

The third read aloud that was video recorded and transcribed took place the fifth week of the study. Again, for this book the teachers were provided a protocol with pre-, during-, and post-reading questions. Teachers were instructed to allow for a five second wait time and accept responses until students were finished talking. They were to read with vocal and facial expressions and gestures, expand upon children’s utterances, and provide positive feedback.

The third read aloud video recorded and transcribed was Willems’ *The Duckling Gets a Cookie* (2012). For this reading, four pre-reading questions, 13 during-reading questions, and two post-reading questions were provided. Again, the teachers were free to ask their own questions as well, but only those included in the protocol were used to tally student responses.

The third reading in classroom No. 1 was nearly as long as the second - 12:17 in total. The introduction for this story was 3:03. Chrissy spent approximately 7:30 on the reading and 1:20 minutes on the follow-up.

Chrissy: “This is a new mark…”
Michael: “It’s a question mark.”
Chrissy: “It is. Thank you, Michael.”
Michael: “It’s an exclamation mark too.”

Chrissy: “Tell me about your picture. What is your favorite kind of cookie?”
Jimmy: “My cookie is a chocolate doughnut cookie.”
Laura: “Chocolate chip.”
Dolly: “Strawberry.”
Thinking strategies during interactive book reading

Chrissy: “How does it make the pigeon feel when the duckling gets what he wants?”
Carla: “Excited. And mad.”

Chrissy: “The duckling’s cookie has nuts. How is that different from the picture you drew of your favorite cookie?”
Carla: “Strawberries and chocolate chips and raspberries.”

Chrissy: “Why do the words look different?”
Brandon: “He’s so mad.”

Chrissy: “Do you think he’s sad because he doesn’t get what he wants or is it another trick?”
Jimmy: “I think it’s a trick.”
Ricky: “A trick.”

During the 12:17 reading, the students used four thinking strategies –schema, inferences, mental images, and determining importance.

**Third Read Aloud, Classroom 2.**

The read aloud in classroom No. 2 took place shortly before Thanksgiving. The class was engaged in a book, pajama, and toy donation; therefore, the concept of sharing was on the minds of all children. Trisha made a great effort to tie the book into the donation, and she continued to probe student thinking and extended response.

Trisha held up the book, and before the introduction, Christopher said, “I see that funny mark.”
Trisha: “I see it too, Christopher.”

Trisha: “I think you already made a picture. Tell me about your favorite cookie.”
Laura: “Sprinkles.”
Gloria: “Sprinkles too.”

Trisha: “How does it make the pigeon feel when the duckling gets what he wants?”
Christopher: “Sad.”

Trisha: “How is that different from the picture you drew of your favorite cookie?”
Christopher: “It has nuts.”
Trisha: “Oh, this one has nuts and yours did not?”
Trisha: “What do we know about Mo’s words when they look like this?”
Christopher: “They’re big and that means he’s yelling.”

Trisha: “Do you think he’s sad because he doesn’t get what he wants or is it another trick?”
Laura: “He’s trying to trick us, because he wants another cookie.”

Trisha: “What is an important question he hasn’t asked the duckling?”
Christopher: “Please.”

Trisha: “We were thinking about the pigeon and the duckling sharing a cookie. Is it important to share with your friends? What are some other ways you can make friends?”
Christopher: “Take turns.”
Trisha: “We were talking today about ways to share...”
Christopher: “Thanksgiving.”
Trisha: “Thanksgiving. What are we doing this Thanksgiving?”
Several students: “Sharing books and pajamas and toys.”
Trisha: “Who are we sharing with?”
Christopher: “Boys and girls that don’t have them.”

Trisha and classroom No. 2 spent 17:58 on the third read aloud. The introduction was almost four minutes, the story was 12 minutes, and the follow-up was two minutes.

During the reading, the students used five thinking strategies – schema, inferences, mental images, asking questions, and determining importance. One student was able to ask a question of the characters (strategy of asking questions), and this was not achieved in classroom No. 1. Trisha also extended student language and conversation beyond the book to include a class project.

**Fourth Read Aloud, Classroom 1.**

The fourth read aloud that was video recorded and transcribed took place the eighth week of the study. Again, for this book the teachers were provided a protocol with pre-, during-, and post-reading questions. Teachers were instructed to allow for a five second wait time and accept responses until students were finished talking. They were to
Thinking strategies during interactive book reading

read with vocal and facial expressions and gestures, expand upon children’s utterances, and provide positive feedback.

The fourth read aloud video recorded and transcribed was Willems’ *Knuffle Bunny Free: An Unexpected Diversion* (2010). For this reading, two pre-reading questions, 17 during-reading questions, and two post-reading questions were provided. Again, the teachers were free to ask their own questions as well, but only those included in the protocol were used to tally student responses.

The fourth reading in classroom No. 1 was the longest – 20:44 in total. The introduction for this story was two minutes, the reading was 17 minutes, and the follow-up was 1:30. For the final reading, two general education students and one special education student were absent.

Chrissy: “What should you do with your toys when you get too big for them?”
Carla: “Sell them.”
Mary: “Give them to someone else.”
Jimmy: “Maybe we can sell small toys and get big toys for big people.”

Chrissy: “Trixie has lost Knuffle Bunny two times. What do you think will happen this time?”
Jimmy: “I think the pigeon is going to take him.”
Chrissy: “And lose it?”

Chrissy: “How do you think Trixie is going to act?”
Carla: “She will act frustrated. My sister did that when she was little.”

Chrissy: “What do you think Oma and Opa are going to do?”
Jimmy: “Maybe they can drive to China.”

During the reading, the students used four thinking strategies – schema, inferences, asking questions, and synthesizing. The children discussed the idea of sharing toys when one outgrew them and the importance of wanting to make another happy.
Chrissy’s follow-up included reading the letter at the end of the story and a summary of
Trixie’s (main character in Knuffle Bunny) life as told through the three books.

**Fourth Read Aloud, Classroom 2.**

*Knuffle Bunny Free* was another tale of sharing with others. Therefore, Trisha and
the class continued their discussion of the book, pajama, and toy donation. On the day of
the final reading, the boys and girls also made holiday gifts for one another. This was a
second opportunity for the teacher and children to discuss sharing. This allowed the book
to extend past the reading. The fourth experience in classroom No. 2 was 23:52 in total.
The introduction was 2:20, reading was approximately 20 minutes, and the follow-up was
1:30.

Trisha: “What should you do with your toys when you’re too big to play with
them?”
Laura: “Give them to someone else.”
Trisha: “Give them to someone else. Is that what we’re doing with our toy drive?”
Christopher: “Yeah!”

Trisha: “Trixie has lost Knuffle Bunny two times. What do you think will happen
this time?”
Gloria: “Lose him.”
Christopher: “Keep him.”
Trisha: “Oh, Gloria thinks Trixie will lose Knuffle Bunny again, and Christopher
thinks she will not.”

Trisha: “I’m already noticing a problem. Does anyone see a problem for Trixie?”
Laura: “She’s not holding Knuffle Bunny.”

Trisha: “What is she going to do? How do you think Trixie is going to act?”
Gloria: “She’s gonna throw a fit.”

During the reading, the students used four thinking strategies – schema,
inferences, mental images, and synthesizing. The children had difficulty asking questions
of the author or characters. Trisha offered a lot of scaffolding, and together the class asked, “Trixie, did this new toy make you happy?”

**Time.**

As previously discussed, time is essential in read alouds, because it is a social and learning process requiring active participation from teachers and learners. Dickinson et al. (2002) found disparity in the amount of interactive and shared book reading. In the current study, the amount of time spent reading varied by teacher. During the intervention, the protocol asked teachers to accept children’s responses until they were finished commenting. Teachers were also encouraged to expand upon student utterances. Chart 3 represents the amount of time spent during the four video recorded book reading experiences in classroom No. 1, and chart 4 represents classroom No. 2.
Chart 3
Time spent on the interactive book reading in classroom No. 1

Chart 4
Time spent on the interactive book reading in classroom No. 2
The interactive reading experiences in classroom No.2 were longer for each reading (classroom No. 1: M = 13:14; classroom No. 2: M = 20:55). The protocol called for teachers to accept all student responses and expand upon their conversations. As evidenced by the descriptions, the teacher in classroom 2 did that in each read aloud. She was also able to tie the third and fourth readings into an ongoing class project.

Guiding Questions Results

Question 1.

Which thinking strategies do preschool students use when they respond to deep structure questions?

Question No. 1 was answered through observation of four read alouds taking place the first, third, fifth, and eighth weeks of the study. The read alouds were video recorded, and student use of thinking strategies when responding to questions was coded according to the criteria set forth by Keene and Zimmerman (2007) and detailed in the literature review (Table 6). In the current study, reading No. 1 was the baseline, and teachers were to conduct the read aloud as they typically would. The remaining three videotaped interactive read aloud experiences took place according to a protocol that provided deep structure questions for pre-, during and post-reading (see Appendix C). Frequency tallies were used to quantify student use of thinking strategies. The tables that follow (7-22) present the number of thinking strategies used in each classroom and the number of thinking strategies used by each student during the four videotaped read alouds.

During the first read aloud in classroom No. 1, the children used three thinking strategies – schema, inferences, and determining importance. Of the 12 participants in the
Thinking strategies during interactive book reading

study, eight students utilized thinking strategies in responding to the text, and one was absent.

Table 7
Thinking strategies used in classroom No. 1, Read Aloud 1

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Table 8
Thinking strategies used by child in classroom No. 1, Read Aloud 1

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Note: * indicates a special education student; a student with no data indicates absent

During the first read aloud in classroom No. 2, the children used four thinking strategies – monitoring meaning, schema, inferences, and determining importance. Only half of the study participants (2 general education, 1 special education) offered responses involving a thinking strategy.
Thinking strategies during interactive book reading

During the second read aloud in classroom No. 1, the students used five thinking strategies – monitoring meaning, schema, inferences, mental images, and determining importance. All of the students made a mental image, because the strategy was explicitly directed and discussed in the pre-reading protocol. Determining importance also had increased usage during reading, because students had explicit instruction in text features prior to reading as well.

### Table 9

Thinking strategies used in classroom No. 2, Read Aloud 1

<table>
<thead>
<tr>
<th></th>
<th>Monitoring</th>
<th>Schema</th>
<th>Asking Questions</th>
<th>Inferences</th>
<th>Mental Images</th>
<th>Determining Importance</th>
<th>Synthesizing</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
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<td>0</td>
<td>5</td>
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<td>1</td>
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</tr>
</tbody>
</table>

### Table 10

Thinking strategies used by child in classroom No. 2, Read Aloud 1

<table>
<thead>
<tr>
<th>Child</th>
<th>Monitoring</th>
<th>Schema</th>
<th>Asking Questions</th>
<th>Inferences</th>
<th>Mental Images</th>
<th>Determining Importance</th>
<th>Synthesizing</th>
</tr>
</thead>
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<td>0</td>
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</tr>
</tbody>
</table>

Note: * indicates a special education student

### Table 11

Thinking strategies used in classroom No. 1, Read Aloud 2

<table>
<thead>
<tr>
<th></th>
<th>Monitoring</th>
<th>Schema</th>
<th>Asking Questions</th>
<th>Inferences</th>
<th>Mental Images</th>
<th>Determining Importance</th>
<th>Synthesizing</th>
</tr>
</thead>
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<td>9</td>
<td>6</td>
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</table>
Table 12
Thinking strategies used by child in classroom No. 1, Read Aloud 2

<table>
<thead>
<tr>
<th>Child</th>
<th>Monitoring Meaning</th>
<th>Schema</th>
<th>Asking Questions</th>
<th>Inferences</th>
<th>Mental Images</th>
<th>Determining Importance</th>
<th>Synthesizing</th>
</tr>
</thead>
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<td>4</td>
<td>0</td>
</tr>
<tr>
<td>9*</td>
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</tr>
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<td>0</td>
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</tr>
</tbody>
</table>

Note: * indicates a special education student

During the second read aloud in classroom No. 2, the students used five thinking strategies as well – monitoring meaning, schema, inferences, mental images, and determining importance. Again, all of the students made a mental image, because the strategy was explicitly directed and discussed in the pre-reading protocol. Determining importance also had increased usage during reading, because students had explicit instruction in text features prior to reading as well.

Table 13
Thinking strategies used in classroom No. 2, Read Aloud 2

<table>
<thead>
<tr>
<th></th>
<th>Monitoring Meaning</th>
<th>Schema</th>
<th>Asking Questions</th>
<th>Inferences</th>
<th>Mental Images</th>
<th>Determining Importance</th>
<th>Synthesizing</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
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<td>0</td>
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<td>3</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 14
Thinking strategies used by child in classroom No. 2, Read Aloud 2

<table>
<thead>
<tr>
<th>Child</th>
<th>Monitoring</th>
<th>Meaning</th>
<th>Schema</th>
<th>Asking Questions</th>
<th>Inferences</th>
<th>Mental Images</th>
<th>Determining Importance</th>
<th>Synthesizing</th>
</tr>
</thead>
<tbody>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: * indicates a special education student

During the first read aloud in classroom No. 1, the students used four thinking strategies – schema, inferences, mental images, and determining importance. Students were again instructed to make a mental image. It should be noted student No. 13 had yet to make a verbal contribution to the classroom discussion. Conversations with Chrissy revealed she was preparing to initiate the special education referral process for this child.

Table 15
Thinking strategies used in classroom No. 1, Read Aloud 3

<table>
<thead>
<tr>
<th></th>
<th>Monitoring</th>
<th>Schema</th>
<th>Asking Questions</th>
<th>Inferences</th>
<th>Mental Images</th>
<th>Determining Importance</th>
<th>Synthesizing</th>
</tr>
</thead>
<tbody>
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<td>General Education</td>
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<td>0</td>
<td>2</td>
<td>12</td>
<td>3</td>
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<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 16
Thinking strategies used by child in classroom No. 1, Read Aloud 3

<table>
<thead>
<tr>
<th>Child</th>
<th>Monitoring Meaning</th>
<th>Schema</th>
<th>Asking Questions</th>
<th>Inferences</th>
<th>Mental Images</th>
<th>Determining Importance</th>
<th>Synthesizing</th>
</tr>
</thead>
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</tr>
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<td>3</td>
<td>1</td>
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<td>2</td>
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<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: * indicates a special education student

During the third read aloud in classroom No. 2, the students used five thinking strategies – schema, inferences, mental images, asking questions, and determining importance. One student was able to ask a question of the characters (strategy of asking questions), and this was not achieved in classroom No. 1. All of the students contributed verbally to the interactive read aloud.

Table 17
Thinking strategies used in classroom No. 2, Read Aloud 3

<table>
<thead>
<tr>
<th></th>
<th>Monitoring Meaning</th>
<th>Schema</th>
<th>Asking Questions</th>
<th>Inferences</th>
<th>Mental Images</th>
<th>Determining Importance</th>
<th>Synthesizing</th>
</tr>
</thead>
<tbody>
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<td>General Education</td>
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<td>8</td>
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<td>4</td>
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<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 18
Thinking strategies used by child in classroom No. 2, Read Aloud 3

<table>
<thead>
<tr>
<th>Child</th>
<th>Monitoring</th>
<th>Meaning</th>
<th>Schema</th>
<th>Asking Questions</th>
<th>Inferences</th>
<th>Mental Images</th>
<th>Determining Importance</th>
<th>Synthesizing</th>
</tr>
</thead>
<tbody>
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<td>0</td>
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<tr>
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<td>0</td>
</tr>
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<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: * indicates a special education student

During the fourth read aloud in classroom No. 1, the students used four thinking strategies – schema, inferences, asking questions, and synthesizing. Two general education students and one special education student were absent for the final reading. All of the participants offered a verbal response, except No. 13. She was the only student in the entire population not to speak during the book readings.

Table 19
Thinking strategies used in classroom No. 1, Read Aloud 4

<table>
<thead>
<tr>
<th>Child</th>
<th>Monitoring</th>
<th>Schema</th>
<th>Asking Questions</th>
<th>Inferences</th>
<th>Mental Images</th>
<th>Determining Importance</th>
<th>Synthesizing</th>
</tr>
</thead>
<tbody>
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<td>2</td>
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<td>3</td>
</tr>
</tbody>
</table>
Thinking strategies during interactive book reading

Table 20
Thinking strategies used by child in classroom No. 1, Read Aloud 4

<table>
<thead>
<tr>
<th>Child</th>
<th>Monitoring Meaning</th>
<th>Schema</th>
<th>Asking Questions</th>
<th>Inferences</th>
<th>Mental Images</th>
<th>Determining Importance</th>
<th>Synthesizing</th>
</tr>
</thead>
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<tr>
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<td>5</td>
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</tr>
</tbody>
</table>

Note: * indicates a special education student; a student with no data indicates absent

During the fourth read aloud in classroom No. 2, the students used four thinking strategies – schema, inferences, mental images, and synthesizing. The children had difficulty asking questions of the author or characters. Trisha offered a lot of scaffolding, and together the class asked, “Trixie, did this new toy make you happy?”

Table 21
Thinking strategies used in classroom No. 2, Read Aloud 4

<table>
<thead>
<tr>
<th></th>
<th>Monitoring Meaning</th>
<th>Schema</th>
<th>Asking Questions</th>
<th>Inferences</th>
<th>Mental Images</th>
<th>Determining Importance</th>
<th>Synthesizing</th>
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</thead>
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<td>8</td>
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<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Special Education</td>
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<td>4</td>
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<td>5</td>
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<td>0</td>
</tr>
</tbody>
</table>
Table 22
Thinking strategies used by child in classroom No. 2, Read Aloud 4

<table>
<thead>
<tr>
<th>Child</th>
<th>Monitoring Meaning</th>
<th>Schema</th>
<th>Asking Questions</th>
<th>Inferences</th>
<th>Mental Images</th>
<th>Determining Importance</th>
<th>Synthesizing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>4*</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5*</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: * indicates a special education student

Although all strategies were utilized by at least one student during the interactive read alouds, as evidenced by observations and frequency tallies, a comparison of the mean usage of thinking strategies across classrooms and readings revealed three strategies with more usage: schema, determining importance, and making inferences (see Table 23).
Table 23
Mean (standard deviation) usage of thinking strategies across classrooms and readings

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Classroom 1</th>
<th>Classroom 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>MonMean1</td>
<td>.17 (.41)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>MonMean3</td>
<td>.17 (.41)</td>
<td>1.50 (1.73)</td>
</tr>
<tr>
<td>MonMean5</td>
<td>.00 (.00)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>MonMean8</td>
<td>.00 (.00)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Schema1</td>
<td>.67 (.812)</td>
<td>.91 (1.51)</td>
</tr>
<tr>
<td>Schema3</td>
<td>1.50 (1.38)</td>
<td>1.50 (1.73)</td>
</tr>
<tr>
<td>Schema5</td>
<td>1.17 (1.47)</td>
<td>.50 (0.52)</td>
</tr>
<tr>
<td>Schema8</td>
<td>2.83 (1.84)</td>
<td>1.33 (1.41)</td>
</tr>
<tr>
<td>Ask1</td>
<td>.00 (.00)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Ask3</td>
<td>.00 (.00)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Ask5</td>
<td>.17 (.41)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Ask8</td>
<td>.00 (.00)</td>
<td>.11 (.33)</td>
</tr>
<tr>
<td>Infer1</td>
<td>1.17 (1.33)</td>
<td>.73 (.65)</td>
</tr>
<tr>
<td>Infer3</td>
<td>1.33 (1.21)</td>
<td>.58 (1.17)</td>
</tr>
<tr>
<td>Infer5</td>
<td>1.33 (1.97)</td>
<td>.33 (.78)</td>
</tr>
<tr>
<td>Infer8</td>
<td>2.17 (1.72)</td>
<td>1.00 (1.66)</td>
</tr>
<tr>
<td>Image1</td>
<td>.00 (.00)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Image3</td>
<td>1.00 (.00)</td>
<td>1.33 (.65)</td>
</tr>
<tr>
<td>Image5</td>
<td>1.17 (.41)</td>
<td>1.75 (.75)</td>
</tr>
<tr>
<td>Image8</td>
<td>.17 (.41)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Import1</td>
<td>.33 (.52)</td>
<td>.09 (.30)</td>
</tr>
<tr>
<td>Import3</td>
<td>.83 (.98)</td>
<td>.58 (1.24)</td>
</tr>
<tr>
<td>Import5</td>
<td>1.17 (1.60)</td>
<td>.58 (.79)</td>
</tr>
<tr>
<td>Import8</td>
<td>.00 (.00)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Synthesis1</td>
<td>.00 (.00)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Synthesis3</td>
<td>.00 (.00)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Synthesis5</td>
<td>.17 (.41)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Synthesis8</td>
<td>.17 (.41)</td>
<td>.33 (.71)</td>
</tr>
</tbody>
</table>

Table 24
Mean usage of schema, making inferences, and determining importance

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Classroom</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schema</td>
<td>1</td>
<td>6.17</td>
<td>4.02</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4.50</td>
<td>3.93</td>
</tr>
<tr>
<td>Inferences</td>
<td>1</td>
<td>6.00</td>
<td>5.25</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3.00</td>
<td>3.38</td>
</tr>
<tr>
<td>Determining importance</td>
<td>1</td>
<td>2.33</td>
<td>2.94</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1.38</td>
<td>2.20</td>
</tr>
</tbody>
</table>
The number of participants in the study was fairly small, with 12 students in one classroom and six in the other. An independent sample T-Test using class as the grouping variable allowed for the testing of differences between classrooms. On average, classroom No. 1 students used a greater number of schema (M = 6.17, SD = 4.02), inferences (M = 6.00, SD = 5.25), and determining importance (M = 2.33, SD = 2.94) than classroom No. 2 (schema: M = 4.50, SD = 3.93; inferences: M = 3.00, SD = 3.38; importance: M = 1.38, SD = 2.20). This difference was not significant for schema t(18) = .78, p > .05; and the effect size was small (r = .18). This difference was not significant for inferences t(18) = 1.30, p > .05; and the effect size was small (r = .29). This difference was not significant for determining importance t(18) = .70, p > .05; and the effect size was small (r = .16). Because there was no significant difference, the classroom data were collapsed to create a population of 18 (see Table 25).

Table 25
Independent sample T-Test: Collapsing the classrooms

<table>
<thead>
<tr>
<th></th>
<th>T</th>
<th>Df</th>
<th>Sig. (2-tailed)</th>
<th>Mean diff</th>
<th>Std. Error diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of schema</td>
<td>.78</td>
<td>12</td>
<td>.45</td>
<td>1.67</td>
<td>2.14</td>
</tr>
<tr>
<td>across all sessions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of inferences across all sessions</td>
<td>1.30</td>
<td>12</td>
<td>.22</td>
<td>3.00</td>
<td>2.30</td>
</tr>
<tr>
<td>Total number of importance across all sessions</td>
<td>.70</td>
<td>12</td>
<td>.49</td>
<td>.96</td>
<td>1.37</td>
</tr>
</tbody>
</table>
**Summary.**

In summary, the preschool students in the two inclusive preschool classes used all seven thinking strategies during the interactive book read alouds. However, a comparison of the mean usage showed schema, making inferences, and determining importance were used more often. For comparison of general education and special education students addressed in question No. 2, the two classrooms were collapsed into one population of 18 since an independent-sample T-test revealed no significant differences between the two classrooms. Subsequent analysis in Question No. 2 divides the total population of 18 into 7 special education and 11 general education students.

**Question 2.**

**Do general education students and special education students use different thinking strategies when responding to deep structure questions?**

For the comparison of the general education and special education students, the three most frequently used strategies - schema, making inferences, and determining importance – were considered. An independent sample T-Test on the usage of schema, making inferences, and determining importance across all four readings was run to determine if the two groups differed in their implementation. On average, general education students used a greater number of schema (M = 5.86, SD = 4.09) and inferences (M = 5.25, SD = 5.06) across all sessions than special education students (M = 4.33, SD = 3.83; M = 3.00, SD = 3.22). On average, special education students used a greater number of determining importance (M = 2.33, SD = 2.58) than general education students (M = 1.38, SD = 2.50). This difference was not significant for schema t(18) = .72, p > .05; and the effect size was small (r = .17). This difference was not significant for inferences
t(18) = .95, p > .05; and the effect size was small (r = 0.22). This difference was not significant for determining importance t(18) = -.70, p > .05; and the effect size was small (r = 0.16) (see Tables 26 and 27).

Table 26
Mean usage of schema, making inferences, and determining importance by general education and special education students

<table>
<thead>
<tr>
<th>Student</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schema</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>5.88</td>
<td>4.09</td>
</tr>
<tr>
<td>2</td>
<td>4.33</td>
<td>3.83</td>
</tr>
<tr>
<td>Inferences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>5.25</td>
<td>5.06</td>
</tr>
<tr>
<td>2</td>
<td>3.00</td>
<td>3.22</td>
</tr>
<tr>
<td>Determining importance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.38</td>
<td>2.50</td>
</tr>
<tr>
<td>2</td>
<td>2.33</td>
<td>2.58</td>
</tr>
</tbody>
</table>

Note: 1 indicates a general education student; 2 indicates a special education student

Table 27
Independent sample T-Test: General education and special education students

<table>
<thead>
<tr>
<th>T</th>
<th>Df</th>
<th>Sig. (2-tailed)</th>
<th>Mean diff</th>
<th>Std. Error diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>.72</td>
<td>12</td>
<td>.49</td>
<td>1.54</td>
<td>2.15</td>
</tr>
<tr>
<td>.95</td>
<td>12</td>
<td>.36</td>
<td>2.25</td>
<td>2.37</td>
</tr>
<tr>
<td>-.70</td>
<td>12</td>
<td>.49</td>
<td>-.96</td>
<td>1.36</td>
</tr>
</tbody>
</table>

As the data show, there was no significant difference in thinking strategy use between general education and special education students.
Summary.

In summary, all seven thinking strategies were utilized during the interactive read alouds. Frequency counts revealed a higher mean usage of schema, making inferences, and determining importance. The two classrooms were combined following an independent sample T-Test indicating no significant difference between the two classrooms for strategy usage; therefore, the population was 18 total children. Schema, making inferences, and determining importance were as likely to be used by a general education as a special education student. The conclusion was drawn following an independent sample T-Test showing no significant difference in strategy use.
CHAPTER 5

Conclusions and Discussion

This chapter includes a summary of the study, conclusions, discussion, implications for practice, and recommendations for future research. Within the summary is the purpose of the study, guiding research questions, and descriptions of the participants and procedures. Conclusions present a summary of the results, as well as limitations of the study. The discussion illustrates the importance of early childhood teachers’ active contributions to students’ conceptualization of literacy through community experiences as identified in previous studies. Implications for practice contain suggestions for classroom applications and the importance of implementing the suggestions. Finally, recommendations for future research and a final summary are presented.

Summary

Purpose.

The purpose of this study was to investigate children’s use of thinking strategies in inclusive preschool classrooms during whole group interactive reading time as it
related to their responses to deep structure questions. Further, this study investigated the use of thinking strategies among the general education and special education populations in the classroom.

**Guiding Questions.**

1. Which thinking strategies do preschool students use when they respond to deep structure questions?

2. Do general education students and special education students use different thinking strategies when responding to deep structure questions?

**Participants.**

Observations and statistical analysis were used to explore the research questions. General education and special education students and their teachers in two inclusive preschools classrooms were the participants in the study. The classrooms were housed in two separate elementary schools in the same school district.

The two groups of student participants were combined for data analysis following an independent sample T-Test that showed no significant difference in strategy usage between the two classrooms. This led to 18 children (10 boys; 8 girls) enrolled in the study. Of the total, 11 were general education students (4 boys; 7 girls) and 7 were special education students (6 boys; 1 girl). Of the special education population, one (14%) was diagnosed with an orthopedic impairment, two (29%) were diagnosed as other health impaired, one (14%) was diagnosed with autism, and three (43%) had a developmental delay. Children’s ages in November 2012 ranged from 46 to 68 months (M=55, SD=7). Seventeen were Caucasian (94%) and one was multi-racial (6%). All children (100%) spoke English at home. Of the total students, 13 (72%) had previous preschool experience, and five (28%) did not prior to the 2012-2013 school year.
The first teacher had been in her current position for seven years, and the second teacher had been in her current position for nine years.

**Procedures and Analysis.**

Observations and statistical analysis were used to address the research questions. Although only four read alouds were video recorded for transcription and inclusion in the study, all eight were observed by the researcher to ensure treatment of fidelity by the classroom teachers in the use of the provided protocols that contained higher order questions.

Read alouds were observed for eight consecutive weeks in each classroom. The first, third, fifth, and eighth readings were video recorded, and the video recordings were transcribed and analyzed. Frequency counts were used to determine which thinking strategies were used by preschool students when they responded to deep structure questions. As previously mentioned, an independent sample T-Test allowed for the combination of the two classes, and an independent sample T-Test was used to answer question No. 2.

**Conclusions**

**Summary of Results.**

*Thinking strategies used by preschool students.*

The preschool students in the two inclusive preschool classes used all seven thinking strategies during the interactive book read alouds. However, a comparison of the mean usage showed schema, making inferences, and determining importance were used more often. For the comparison of general education and special education students, addressed in question No. 2, an independent sample T-test revealed no significant
difference between the two classrooms in strategy usage; therefore, they were collapsed into one with a population of 18 students.

**General education students and special education students.**

The two classrooms were combined following an independent sample T-Test indicating no significant difference between the two classrooms for strategy usage; therefore, the population was 18 total children. Schema, making inferences, and determining importance were as likely to be used by a general education student as by a special education student. The conclusion was drawn following an independent sample T-Test showing no significant difference in strategy use.

**Limitations.**

No research is without limitations. This study provided insight into the abilities of preschool students in two inclusive classrooms, but it did not reflect how preschool students in general might use thinking strategies during interactive read alouds.

The first limitation was the small student sample size. The participating school district had three community-based preschool classrooms. However, scheduling only permitted for the participation of two afternoon classes. The potential number of child participants was 32; however, only 18 families consented to the study. The small student sample size impacted the number of general education and special education children in each group and the total number of thinking strategies used. Due to the small number, it was difficult to run statistical analysis on the collected data and determine a large effect size.

Participants were selected in a convenience sample, leaving some populations unrepresented. These populations included teachers and students in a general education
preschool class or self-contained special education preschool class, male teachers, teachers without 4-year college degrees, teachers and students in suburban and rural settings, and students whose home language is something other than English. It is possible the results of the present study would have been different if different populations were represented.

Another limitation was time. The study took place over an eight-week period with one read aloud per week. A longer intervention or an intervention of the same length with more frequent readings would have allowed for additional teacher instruction and student practice. Additional instruction and practice might have led to the students using more thinking strategies during the read alouds.

**Discussion**

Beginning in preschool, the cognitive demands teachers place on their students are often the first steps in comprehension that will impact future academic success (Connor, Morrison, & Petrella, 2004; Mashburn, et al., 2009). Deep structure questioning requires the reader to construct meaning at the whole-text level, determine importance, create mental images, relate the new to the known (schema), question, infer, and synthesize (NRP, 2000). Young children often have difficulty with these tasks (Flavell, 1990); therefore, explicit instruction and dialogue are important in scaffolding student response. This was evidenced by several studies indicating children are able to raise their level of thinking to reach the abilities of a more experienced partner (Blank, Rose, & Berlin, 1978; Danis, Bernard, & Leproux, 2000; Zucker, Justice, Piasta, & Kaderavek, 2010).
When teachers facilitate student discussions, the children collaborate to form joint interpretations of text and acquire a deeper understanding of the mental and cognitive processes involved in comprehension. These discussions between children and adults in preschool classrooms are critical when building comprehension (Morrow, 1990; Danis, Bernard, & Leproux, 2000; McKeown & Beck, 2006; Moschovaki, Meadows, & Pellegrini, 2007; Zucker, Justice, Piasta, & Kaderavek, 2010). The dialogue extends student thinking and builds meaning with the class (Wells, 1995; Sipe, 2008; Wiseman, 2011). This engagement in discussion appears to contribute more to comprehension development than simply reading aloud (Duke & Carlisle, 2011). When students are encouraged to respond freely, meaning making profits from insights of young children that would never have surfaced if they were only permitted to respond to teacher questions (Wells, 1995; Sipe, 2008).

This opportunity is extended through interactive book reading. Through group talk, children scaffold interpretations, extend understandings, explore significances, and construct storylines. As they listen to their own talk and the talk of others, children develop understanding of themselves and their world (Mercer, 1995). Children’s responses to quality literature show “individual and collective zones of proximal development as young children listen carefully and think critically and deeply with other group members and push the group to deeper understandings and investigations of life” (Whitmore, Martens, Goodman, & Owocki, 2004, pp. 307). The opportunity to grapple with challenging concepts and raise and resolve questions through social texts presents intellectual challenge as learners connect to ideas to their personal knowledge of the world (Whitmore, et al., 2004).
There were two main implications regarding interactive read alouds from the present study. First, the transactional approach and sociocognitive model illustrate the importance of providing teachers with active ways to contribute to the curriculum in ways that build on students’ conceptualization of literacy (Rosenblatt, 1938, 2004; Ruddell & Unrau, 2004). In the classrooms in this study, the conversations surrounding the text went beyond “open ended” and incorporated confirming, modeling, extending, and building. While the students could contribute to the conversation in many ways, the teacher had an important role of guiding and instructing within the discussion about the stories (Morrow, 1990; Danis, Bernard & Leproux, 2000; Kintsch, 2005; Zucker, et al., 2010). Second, text selection is a significant aspect for encouraging responses in the classroom (Morrow, 1984; Moschovaki, Meadows, & Pellegrini, 2007). It is important to build on students’ personal understandings in ways that are both relatable and engaging. Children’s literature can be a platform for discussions about the world, and quality children’s literature provides a powerful way of to connect with their lives while modeling thinking strategies (Pantaleo, 2007; Torr, 2007). By bringing in engaging texts, a teacher can build on information that students have and also create learning opportunities in the classroom that affects the classroom community. Interactive read alouds are an important pedagogical tool for teachers in the classroom. Not only do they provide opportunities for children to develop literacy skills while listening to picture books, but they also create a community where children can learn together (Mercer, 1995; Whitmore, et al., 2004; Justice, et al., 2005; Pantaleo, 2007).

The findings of the present study aligned with the findings of Blank, Rose, and Berlin (1978); Danis, Bernard, and Leproux (2000); and Zucker, Justice, Piasta, and
Kaderavek’s (2010) on scaffolding and levels of abstraction. The children in the present study showed an increase in the number of thinking strategies used in the third, fifth, and eighth read alouds when protocols provided deep structure questions for the teachers. The present study also aligned with Mercer (1995), Pantaleo (2007), and Torr’s (2007) work on children’s ability to connect literature to their lives. Students in classroom No. 2 were participating in a project related to themes identified in the third and fourth read aloud, and the correlation was discussed as a whole group following one child’s synthesis of information.

The increased use of schema, inferences, and determining importance was expected when one considers child development and the recommendations of the National Reading Panel (2000). Piaget said children at the pre-operational stage (stage in preschool) are egocentric. This developmental trait lends to children’s discussions of their personal experiences and use of schema when questioned by teachers. Although making inferences is a more complex task, it is a collaboration of prior knowledge and information drawn from the text. Finding text information and text features (determining importance) were taught explicitly by the teachers in the present study as advised by the National Reading Panel.

Although the mean usage of the three thinking strategies was expected, it is important to remember all seven strategies were used by the preschool students. This finding showed young children are capable of thinking more deeply about books when provided supports. Secondly, it is important to remember the general education and special education students showed no significant difference in their usage of strategies.
As a classroom teacher, one must maintain similar expectations for all children’s participation in interactive read alouds.

**Implications for Practice**

If we know children have the ability to use thinking strategies through discussion when provided explicit instruction, then teachers must reflect upon the questions posed to children and the quality of book reading experiences provided in the preschool classroom. Teachers must remember quality book readings give pleasure to the listeners, develop strong positive associations with language, and encourage lively responses through interactions.

It is crucial for teachers to make time daily for interactive read alouds. These experiences should include questioning before, during, and after the reading and lead the students to higher levels of abstraction. Advancing to higher levels will cause the students to use thinking strategies. These questions should be developed before interacting with the children, thus teachers must preview books before reading and consider some possible learning objectives. As evidenced in the present study and through the literature review, students need explicit instruction in developing the capacity to use the thinking strategies, and teachers must facilitate those learning times through modeling and thinking aloud.

All students can be taught to use thinking strategies; the only difference lies in the texts used. When teachers select books that directly relate to student background experience, student interest, or a classroom topic, the children are more engaged in the experience and find greater pleasure. Pleasure is also increased when teachers use gestures, facial expressions, and emotions and turn the read aloud into a performance.
In addition to enhancing pleasure, interactive read alouds also develop associations with language. When teachers perform with vocal and facial expressions and gestures, students better understand the vocabulary and story structure. These benefits are also evidenced when teachers describe elements of the book as well. Therefore, teachers must remember the act and experience are more important than merely reading.

A lively experience will lead to lively interactions with the children. As teachers ask thoughtfully posed questions, they must allow for wait time. This allows children to consider all of their stored experiences prior to answering. Doing so causes children to make decisions about the importance of their schema – a process requiring higher order thinking. When students speak, teachers must engage them and expand upon their comments. Teachers must also monitor the participation of all children and hold the belief that all children are capable responders. The same expectations must be maintained for all children. As shown in the present study, all children are capable of using thinking strategies to respond to deep structure questions during interactive read alouds.

**Recommendations for Future Research**

If we want elementary school children to better comprehend reading material, more studies with large populations of early childhood students must be conducted, particularly in the area of answering deep structure questions through the use of thinking strategies. This is a complex task requiring explicit instruction and multiple opportunities to rehearse through the participation of interactive read alouds and accompanying discussions. Future research should examine the use of thinking strategies by a larger population of preschool students in urban, suburban, and rural schools across the continuum of service environments. Another interesting area for future research should
look at students who have previous school experience, exploring how the prior instruction may impact strategy use. Another recommendation is to conduct the study over a longer period of time, such as an entire school year. Allowing for more explicit teacher instruction and additional student practice may lead to an increase in the use of thinking strategies by all preschool students in the study.

Future research should also explore the correlations between teacher questioning style and student use of thinking strategies. When teachers expand upon student utterances and facilitate discussion by encouraging participation from multiple students, there is ample opportunity for further responses and use of thinking strategies.

Future research should also explore classroom events and student use of thinking strategies. The classroom discussions in the present study were lengthier when the topic was related to a classroom project. The children exhibited longer conversations and used more challenging strategies, such as synthesis, when the book was related to the classroom topic.

Another possibility is to explore the significance on student disability and use of thinking strategies. In the present study, six students with four different types of disabilities were represented; however, that total did not produce statistically significant findings. A study that includes a large population of students with special needs and a variety in diagnoses would add to our understanding. This area is especially important, because children with special needs have the opportunity to attend at least two years of preschool before kindergarten enrollment.
Final Thoughts

To maximize the benefits of preschool, teachers must provide explicit instruction in thinking strategies that children can use when responding to deep structure questions asked during interactive read alouds. Texts selected should be engaging and related to the children’s interests or a current classroom topic. Teachers must also facilitate student discussion and provide opportunities for the children to respond freely. Teachers must co-construct a community of learners where reading is an active experience filled with joint interpretations created by rich language. This present study presents information not previously discussed in current literature – all general education and special education preschool students are capable of using the thinking strategies. Therefore, teachers must believe in the capabilities of all learners and hold high expectations for their literacy growth.
Thinking strategies during interactive book reading


cks of universal pre-


Thinking strategies during interactive book reading


Appendix A

Parental Permission, FERPA Authorization, and Student Assent Form
CONSENT FORM

CONSENT BY SUBJECT FOR PARTICIPATION IN RESEARCH PROTOCOL

Research Project: Teachers’ Cognitive Demands and Preschool Students’ Use of Thinking Strategies During Interactive Book Reading

Investigator: Kelli Servizzi

I, ______________________________, the parent/guardian of ______________________________, hereby consent to my child’s participation as a subject in the above named research project, conducted under the direction of the above named person at Ball State University. My consent is given of my own free choice without undue inducement and after the following things have been explained to me.

1. Nature and Duration of the Procedures.

The purpose of this study is to investigate children’s use of thinking strategies in inclusive preschool classrooms during whole group shared reading time as it relates to their responses to deep structure questions. Further, this study will investigate the use of thinking strategies among the general education and special education populations in the classroom. I understand my child was invited to participate, because he/she attends the community-based preschool at one of the selected elementary school sites. As a preschool student in the program, my child is 3- to 5-years-old.

I understand that my child will be observed on four occasions by the principal investigator listed above. The observations will take place during classroom read-alouds. During the read-alouds, I understand my child’s classroom teacher will read a book and ask the class questions. I further understand that my child will be videotaped and his or her responses will be coded according to the way he or she answers the questions. Children’s actual names will not be used in any write-up of the results. The data will be stored in a secure location (password protected computer or locked filing cabinet) for five years following the completion of the study. At the end of this time, the written information will be shredded and videotapes will be deleted.

2. Potential Risks and Benefits

There are no known risks or discomforts associated with this research. It is not anticipated that my child will directly benefit from this research. His/her participation
may, however, contribute toward the improved understanding of teacher questioning, student responses, and the benefits of deep thinking questions.

I understand that if my child seems reluctant or unwilling to participate, he/she will not be forced to participate or to continue their participation in the study. I am free to decide my child will not participate in this study or to withdraw him/her at any time without adversely affecting his/her relationship with Ball State University. My decision will not result in any loss of benefits to which my child is otherwise entitled. If I choose not to have my child participate, I may withdraw him/her at any time by notifying the person administering the research. Upon my request to withdraw, all information pertaining to my child will be destroyed. If I choose to have my child participate, all information will be held in strict confidence and will have no bearing on his/her academic standing or services he/she receives from my school corporation. His/her responses will be considered in combination with those from other participants. The information obtained in this study may be published in journals or presented at meetings, but his/her identity will be kept strictly anonymous.

I have had the opportunity to ask questions concerning any and all aspects of the project and my questions have been answered. I understand that participation is voluntary and that I may withdraw my consent at any time without prejudice to my child. Confidentiality of records concerning my child’s involvement in this project will be maintained in an appropriate manner. When required by law, the records of this research may be reviewed by applicable government agencies. I understand that if I have any questions concerning this research, I can contact the investigator stated below or the supervising faculty member at Ball State University.

Signature of Parent/Guardian ___________________________ Date ____________

Signature of Investigator ___________________________ Date ____________

If you have any questions, you may contact:
Kelli Servizzi
Ball State University
kelli.servizzi@mac.com
317-258-4108

Dr. Patricia Clark
Ball State University
pclark@bsu.edu
765-285-8571

Ball State University
Office of Research Integrity
Institutional Review Board
2000 W. University Ave.
Teachers College, Room 409
Muncie, IN 47306
765-285-5052
FERPA Authorization

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA) Authorization

Research Project: Teachers’ Cognitive Demands and Preschool Students’ Use of Thinking Strategies During Interactive Book Reading

Investigator: Kelli Servizzi

I, _________________________________, the parent/guardian of _________________________________, hereby give authorization for the above named investigator to have access to my child’s educational records. The term "educational records" is defined as those records that contain information directly related to a student and which are maintained by an educational agency or institution or by a party acting for the agency or institution.

Examples include a student's name, address, telephone number, date and place of birth, honors and awards, dates of attendance, and free/reduced lunch assistance. Educational records may also contain an individualized education plan (IEP). If a child is labeled as a student with special needs, an IEP will be included. I understand if my child has an IEP, the plan will be reviewed for disability diagnosis. However, I also understand my child’s name and disability will not be reported. Diagnoses are only being reviewed to determine if disability type affect answers.

I understand by signing this authorization, I am giving the investigator access to my child’s educational records. Children’s actual names will not be used in any write-up of the results. The data will be stored in a secure location (password protected computer or locked filing cabinet) for five years following the completion of the study. At the end of this time, the written information will be shredded and videotapes will be deleted. The information obtained in this study may be published in journals or presented at meetings, but his/her identity will be kept strictly anonymous.

I have had the opportunity to ask questions concerning any and all aspects of the project and my questions have been answered. Confidentiality of records concerning my child’s involvement in this project will be maintained in an appropriate manner. I understand that if I have any questions concerning this research, I can contact the investigator stated below or the supervising faculty member at Ball State University.
Signature of Parent/Guardian

______________________________________________________     ______________

Signature of Investigator

______________________________________________________     ______________

If you have any questions, you may contact:

Kelli Servizzi
Ball State University
kelli.servizzi@mac.com
317-258-4108

Dr. Patricia Clark
Ball State University
pclark@bsu.edu
765-285-8571

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2000 W. University Ave.
Teachers College, Room 409
Muncie, IN 47306
765-285-5052
Student Assent Form

Student's Name _______________________________

SCHOOL NAME

Title: Teachers’ Cognitive Demands and Preschool Students’ Use of Thinking Strategies During Interactive Book Reading

[The investigator will read the form to the student.]

We’re going to sit down, and TEACHER’S NAME is going to read some books to us. Sometimes the books will be about a bird called a pigeon and sometimes the books are going to be about a little girl and her toy bunny.

[The investigator will show the children the books.]

When she is reading, TEACHER’S NAME is going to ask you some questions so you can talk about the books with your friends.

Is it okay if I listen to the books and you?

Is it okay if I use my camera [The investigator will show the student the camera]? It will put your words and picture on the machine and let me watch later.

Is it okay if I do some writing about the smart things you say? [The investigator will show the student the clipboard with the recording form.]

It’s okay if I can’t listen to you and use my camera or write down your smart words. You can still listen to the story with TEACHER’S NAME.

Do you have any questions?
[The investigator should answer any question the child might have.]

________________________________________

Date___________

_____ Student gives verbal assent.

_____ Student does not give verbal assent.
Appendix B

Teacher Consent Form
Teacher Consent

**Study Title**  Teachers’ Cognitive Demands and Preschool Students’ Use of Thinking Strategies During Interactive Book Reading

**Study Purpose and Rationale**
The purpose of this study is to investigate children’s use of thinking strategies in inclusive preschool classrooms during whole group shared reading time as it relates to their responses to deep structure questions. Further, this study will investigate the use of thinking strategies among the general education and special education populations in the classroom.

**Inclusion/Exclusion Criteria**
To be eligible to participate in this study, you must be a teacher in the inclusive preschool class where the study is taking place. Teachers in the study are 22- to 50-years-old.

**Participation Procedures and Duration**
For this project, you will be asked to participate in eight read alouds with your class. The duration of the read aloud is specific to your class’ needs, and I will observe the first, third, fifth, and eighth read aloud in your classroom.

**Audio or Video Tapes (if applicable)**
For purposes of accuracy, with your permission, the first, third, fifth, and eighth read alouds will be videotaped. Any names used on the videotape will be changed to pseudonyms if the tapes are transcribed. Prior to analysis, you will have the opportunity to review each transcription and video recording if you wish. At this time, you may request any information be excluded from the study. The tapes will be maintained for five years in a secure area following the study.

**Data Confidentiality or Anonymity**
All data will be maintained as confidential and no identifying information such as names will appear in any publication or presentation of the data.

**Storage of Data**
Read aloud transcriptions and written information will be stored in the researcher password-protected computer in her home office. Only the researcher and university supervisor will have access to the transcriptions. Data will be stored for five years following the completion of the study. At the end of this time, the written information will be shredded and video tapes will be deleted.
**Risks or Discomforts**
The only anticipated risk from participating in this study is that you may not feel comfortable being observed or video recorded. You may choose to quit the study at any time, without penalty.

**Benefits**
A potential benefit that you may gain from participating in this study could be a better understanding of how your questioning habits affect student comprehension. You may also gain an understanding of the thinking strategies used by your students.

**Voluntary Participation**
Your participation in this study is completely voluntary and you are free to withdraw your permission at anytime for any reason without penalty or prejudice from the investigator. Please feel free to ask any questions of the investigator before signing this form and at any time during the study.

**Consent**
I, ___________________, agree to participate in this research project entitled, “Teachers’ Cognitive Demands and Preschool Students’ Use of Thinking Strategies During Shared Book Reading.” I have had the study explained to me and my questions have been answered to my satisfaction. I have read the description of this project and give my consent to participate. I understand that I will receive a copy of this informed consent form to keep for future reference.

To the best of my knowledge, I meet the inclusion/exclusion criteria for participation (described on the previous page) in this study.

________________________________  ____________________
Participant’s Signature  Date

________________________________  ____________________
Principal Investigator’s Signature  Date

**Researcher Contact Information**
Principal Investigator:  Kelli Servizzi  
317-623-7020  
kelli.servizzi@mac.com  
Faculty Supervisor:  Dr. Patricia Clark  
Ball State University  
pclark@bsu.edu

Ball State University  
Office of Research Integrity  
Institutional Review Board  
2000 W. University Ave.  
Teachers College, Room 409  
Muncie, IN 47306  
765-285-5052
Appendix C

Read Aloud Protocols
Thinking Strategies Protocol

Book: Don’t Let the Pigeon Drive the Bus!
Author: Mo Willems

Information for Teachers

1. This is the first read aloud recording. The experience recorded today will be used as a baseline for the thinking strategies used by the children.

2. Please conduct this read aloud as you normally would and ask your own questions. No questions will be provided for this read aloud.
Thinking strategies during interactive book reading

Adapted from reading guides available at Heinemann, the International Reading Association, and Scholastic.

Thinking Strategies Protocol

Book: The Pigeon Finds a Hot Dog!
Author: Mo Willems

Information for Teachers
1. Read the protocol as written.
2. Allow five seconds after questions to prompt again.
3. This is the thinking symbol. *When you see this, it is a reminder that you will provide children time to think about and respond to the question you have asked.
4. Allow responses until children are finished talking. You may participate in conversation with the children. Encourage all to be good listeners.
5. Make sure your students are ready to begin the read aloud.
6. You will be modeling and encouraging the use of thinking strategies.
7. You will be using open-ended questions and should expand children’s utterances and provide positive feedback.
8. Read with vocal and facial expressions, gestures, etc.
9. Bold text lets you, the teacher, know that a new section is starting.
10. Numbering tells you the sequence being followed in the section.
### Before the Read Aloud

*Model and Guide Practice*

Hold up the front cover of the book. Point to the title and read it.

1. “We are going to read *The Pigeon Finds a Hot Dog!* While we read, we’re going to be monitoring meaning. Those are big words that mean knowing and understanding what you read. While I’m reading, think about what you know about hot dogs and birds. Think about why the pigeon acts like he does. What will he do with a hot dog?”

2. “I wonder why Mo wrote the words in this white bubble.” Point to the exclamation mark. “This is a funny mark. I know it’s not a letter. I wonder what it means.”

3. “Schema is what you already know. We can see a pigeon is a kind of bird.”
   “Use your schema to tell me what you know about birds.”

4. “Let’s use your schema again…what you already know. Some people like to put things on their hot dogs. I’m going to think about what I like on my hot dogs. I like my hot dog in a bun with red ketchup, and yellow mustard, and little white onions. Can you see my hot dog in your mind? What do you like to put on your hot dog? Tell me about it so I can see a picture in my mind.”

5. “Let’s make some smart guesses from what we know, some inferences. What do you think the pigeon will do with the hot dog?”

### During the Read Aloud

*Model and Guide Practice*

1. “Remember, we are thinking about what the pigeon will do with a hot dog.”

2. Read pages 1 and 2

3. “I can tell the pigeon is excited to find a hot dog. He looks like he is yelling and smiling. I wonder if the pigeon has eaten a hot dog before.”

4. Read pages 3 and 4

5. “Who is this?”

6. “This is a baby duck. It’s called a duckling. Why is the pigeon asking if he can help the duckling?”

7. Read pages 5 and 6
8. “The pigeon says it’s not a hot dog. He says it’s ‘my hot dog.’ I wonder why he is saying that. It looks like a hot dog to me. Why does he say ‘my hot dog?’”
If the children are not getting around to the fact he doesn’t want to share, please help them reach that conclusion.

9. “Why doesn’t he want to share his hot dog?”

10. Have you ever had something special you didn’t want to share?”

11. Read pages 7 and 8

12. “That’s a hard question. What would you tell the duckling?”

13. Read pages 9 and 10

14. “Those are big words! I can see the pigeon is excited because his mouth is open again, and I see that funny mark from the front cover, an exciting mark.” I think the pigeon is excited because he likes hot dogs.”

15. Read pages 11 and 12

16. “The pigeon is not smiling on this page. I don’t think he’s excited anymore. I wonder what is his thinking about. I wonder why he stopped being excited. Does anyone have an inference, a good guess, about why the pigeon is not excited anymore?”

17. Read pages 13 and 14

18. “I remember we saw a line under words when the pigeon said it was ‘my hot dog.’ Here another line. Why is the pigeon saying it is ‘mine’? He’s also getting very close to the duckling’s face.

19. Read pages 15 and 16

20. “Does the duckling seem upset by the pigeon?”

21. Read pages 17 and 18

22. Read pages 19 and 20

23. “Whoa! How does the pigeon feel now? How do you know?”

24. “I know the pigeon is getting pretty upset. I think he’s acting upset because he wants to eat the hot dog and the duckling keeps bothering him. I’m going to keep
reading, but I’m going to remember that the pigeon is mad right now and doesn’t want to share.”

25. Read pages 21 and 22

* 26. “I’ve heard my mom say that before. When she is tired of me asking for stuff she puts her hand on her head like this (do it) and says ‘for Pete’s sake’!” Does your mommy or daddy say anything when you ask them too many questions? What do they look like when you ask lots of questions?”

27. Read pages 23 and 24

* 28. “The pigeon hasn’t wanted to share his hot dog. Do you still think he wants to eat it by himself?”

29. Read pages 25 and 26

30. “I see the pigeon is feeling a lot of things. Here (point) he is mad and says ‘mine,’ ‘mine,’ ‘mine’. Here (point) he is stomping his feet while he walks. Here (point) he is frustrated and puts his hands on his hips. Here (point) he looks tired and doesn’t want to talk about the hot dog anymore. I thought he wouldn’t share, but I am starting to change my thinking and idea.”

31. Read pages 27 and 28

* 32. “Does this make you change your thinking? What will he do with the hot dog? The duckling says he has an idea.”

33. Read pages 29 and 30

* 34. “How does the pigeon feel about the duckling now?”
**Following the Read Aloud**

*Model and Guide Practice*

| *1.* “We were thinking about what the pigeon would do when he found a hot dog. Did you think he would share?”

| *2.* “I’m using my schema to think about what I know about sharing. I used to share my dolls with my sister. I remember how she felt when we shared and how we played together. Why should you share with others?”

Conclude your read aloud the way you normally would.

Adapted from reading guides available at Heinemann, the International Reading Association, and Scholastic.
Thinking Strategies Protocol

Book: Don’t Let the Pigeon Stay Up Late!
Author: Mo Willems

Information for Teachers
1. Read the protocol as written.
2. Allow five seconds after questions to prompt again.
3. This is the thinking symbol. *When you see this, it is a reminder that you will provide children time to think about and respond to the question you have asked.
4. Allow responses until children are finished talking. You may participate in conversation with the children. Encourage all to be good listeners.
5. Make sure your students are ready to begin the read aloud.
6. You will be modeling and encouraging the use of thinking strategies.
7. You will be using open-ended questions and should expand children’s utterances and provide positive feedback.
8. Read with vocal and facial expressions, gestures, etc.
9. Bold text lets you, the teacher, know that a new section is starting.
10. Numbering tells you the sequence being followed in the section.
Before the Read Aloud

Model and Guide Practice

Hold up the front cover of the book. Point to the title and read it.

*1. “We are going to read *Don’t Let the Pigeon Stay Up Late!* While we read, we’re going to keep monitoring meaning. Those are big words that mean knowing and understanding what you read. While I’m reading, think about what you know about the Pigeon. Think about why the pigeon acts like he does. Why won’t he go to bed? Why can’t he stay up late?”

2. “I see words in the white bubble again. Our friend Mo does that a lot when he makes his books. I know now when I see words in the bubble it means someone is talking.” Point to the exclamation mark. “This is a funny mark. I remember it from the other books too. It’s an exciting mark. Someone is yelling when I see it.”

* 3. “Schema is what you already know. We know a little bit about the Pigeon. Use your schema to tell me what you know about him.”

* 4. “Let’s use your schema again…what you already know. Who gets to stay up late?"

* 5. What happens at nighttime when mommies and daddies stay up late?

* 6. If you stay up late, you might have tired eyes like this (show the students sleepy eyes). Make a picture in your mind of someone wearing their pajamas with sleepy eyes.”

* 7. “Let’s make some smart guesses from what we know, some inferences. Why can’t the pigeon stay up late?”
During the Read Aloud  
*Model and Guide Practice*

1. “Remember, we are thinking about why the pigeon won’t go to bed and why he can’t stay up late.”

2. Read the title page

* 3. “I’ve seen this man before. He drove the bus. Now, he’s getting ready for bed. What are some things you do to get ready for bed?”

Read the dedication page and pages 1, 2, and 3

* 4. “These two pages remind me of other stories with the pigeon. I am going to use my schema, what I already know. I know the pigeon likes hot dogs, and he learned to share them with the duckling. I also know the pigeon likes to play tricks on readers. Remember when he wanted us to let him drive the bus?”

5. Read pages 4 and 5

* 6. “Do you think the pigeon will give up if we tell him ‘no’? What is he going to do next?”

7. Read pages 6 and 7

8. “Educational is a big word. It means you will learn. Coming to school is educational, because you learn every day.”

9. Read pages 8 and 9

* 10. “The pigeon is trying hard to stay up late. He’s asking you a lot if he can stay up late. Have you every asked your mommy or daddy many times for something?”

11. Read pages 10 and 11

* 12. “On this page, the pigeon is yawning. What does it mean when someone yawns?”

* 13. “Do you think the pigeon wanted us to see him yawn? Why not?”

14. Read pages 12 and 13

* 15. “Whoa! We’ve seen pages like this before. How does our friend Mo show us the pigeon is yelling?”
* 16. “Why is he yelling?”

17. Read pages 14 and 15

18. Read pages 16 and 17

19. “I wonder how many ways the pigeon is going to try to trick us to stay up late. He’s been yawning and the stars are out. I know stars come out when it is dark. I bet it’s almost bedtime.”

20. Read pages 18 and 19

* 21. “We’re thinking about why the pigeon can’t stay up late. I’m going to make a smart guess, an inference. I remember he couldn’t drive the bus. On these pages I see he has a bunny stuffed animal. I know kids can’t drive buses, and lots of kids have stuffed animals. I wonder if he is a kid pigeon. Kids can’t stay up late. Do you have a smart guess, an inference, why he can’t stay up late?”

22. Read pages 20 and 21

23. Read pages 22 and 23

24. “The pigeon is really acting like he’s getting tired. I wonder why he just won’t go to bed.”

25. Read pages 24 and 25

* 26. “We made a picture in our minds of sleepy eyes before we started reading. Do Mo’s pictures match the pictures you made?”

27. Read pages 26 and 27

* 28. “I think the pigeon finally fell asleep. He has a big mouth and lots of ‘Z’s coming out. What is the pigeon doing?”

After they talk about snoring, please demonstrate and ask everyone to snore.

29. Read pages 28 and 29

*30. “There are two bubbles on these pages.” Point to the word bubble. “This bubble means someone is talking.” Point to the dream bubble. “This bubble means someone is thinking or dreaming. He’s dreaming about hot dogs, and he’s sharing. What do we remember about the pigeon and hot dogs?” Remind the students that he initially didn’t want to share with the duckling, but he did. Reinforce the importance of sharing with others.
| **Following the Read Aloud**  
  * *Model and Guide Practice* |
<table>
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<tbody>
<tr>
<td>* 1. “We were thinking about why the pigeon wouldn’t go to bed. Why do you think he wanted to stay up late?”</td>
</tr>
<tr>
<td>* 2. “Why is it important to get lots of sleep?”</td>
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</table>

Conclude your read aloud the way you normally would.

Adapted from reading guides available at Heinemann, the International Reading Association, and Scholastic.
Thinking Strategies Protocol

Book: The Pigeon Wants a Puppy!
Author: Mo Willems

Information for Teachers
1. Read the protocol as written.
2. Allow five seconds after questions to prompt again.
3. This is the thinking symbol. * When you see this, it is a reminder that you will provide children time to think about and respond to the question you have asked.
4. Allow responses until children are finished talking. You may participate in conversation with the children. Encourage all to be good listeners.
5. Make sure your students are ready to begin the read aloud.
6. You will be modeling and encouraging the use of thinking strategies.
7. You will be using open-ended questions and should expand children’s utterances and provide positive feedback.
8. Read with vocal and facial expressions, gestures, etc.
9. Bold text lets you, the teacher, know that a new section is starting.
10. Numbering tells you the sequence being followed in the section.

Before the Read Aloud
Model and Guide Practice

Hold up the front cover of the book. Point to the title and read it.

* 1. “We are going to read The Pigeon Wants a Puppy! While we read, we’re going to be monitoring meaning. Those are big words that mean knowing and understanding what you read. While I’m reading, think about what you know about this pigeon. He has wanted a lot of things – to drive a bus, to eat a hot dog all by himself, and to stay up late. Has he gotten to do any of those things? Will this time be different?”

2. “We know this is a talking bubble.” Point to the exclamation mark. “We know this is an exciting mark. There are two talking bubbles and two exciting marks. I think the pigeon really, really wants a puppy.”
3. “Schema is what you already know. We know a puppy is a baby dog. A puppy is a pet. Do any of you have pets?”

4. “Let’s make a picture in our heads. Close your eyes and draw a picture with your brain of a puppy you would like to have.”

5. “Let’s use your schema again…what you already know. What are some things you have to do to take care of a pet?”

6. “Let’s ask the pigeon some questions. Let’s see why he wants a puppy and knows how to take care of one.”

This question may need increased facilitation. If this is the first time students are being asked to generate questions, you may need to do lot modeling, and the gradual release of responsibility for this task will take more than one read aloud.

During the Read Aloud

Model and Guide Practice

1. “Remember, we are thinking about all of the things the pigeon has wanted to do. He’s wanted to drive a bus, eat a hot dog by himself, and stay up late. Has he gotten to do those things? Will this time be different?”

2. Read the title page

3. “I can see the pigeon is a writer. He is making a list of everything he wants.”

4. Read pages 1 and 2

5. Read pages 3 and 4

6. “The pigeon is asking us a question. Let’s make a smart guess. What does the pigeon want?”

7. Read pages 5 and 6

8. Read pages 7 and 8

9. “We talked about the different kinds of pets. Why do you think the pigeon wants a puppy?”

10. Read pages 9 and 10
11. “Let’s use our schema, what we know. We know puppies drink water.”
   “How much water should you give a puppy?”

12. Read pages 11 and 12

* 13. “We are going to make an inference, a smart guess from what we know. The pigeon wants to give the puppy water and sunshine. Is that what a puppy needs? What really needs water and sunshine?”

14. Read pages 13 and 14

15. Read pages 15 and 16

* 16. “Let’s monitor our meaning now. Let’s think about what makes sense while we read. We are thinking about everything the pigeon has wanted to do in the other books – drive a bus, eat a hot dog by himself, and stay up late. Did he get to do those things?”

* 17. “Now he wants to ride on a puppy and play tennis with it. Does he know how to take care of a puppy? Would you let him have one yet?”

18. Read pages 17 and 18

19. Read pages 19 and 20

20. “There are lots of things I love that I don’t have. I really like lions, but I know I couldn’t take care of a lion. Sometimes you can’t have what you want, and that’s ok.”

21. Read pages 21 and 22

* 22. “I know the pigeon is getting pretty upset. I can see from these lines that he’s yelling. Do you get your way if you yell and throw a fit?”

23. Read pages 23 and 24

24. Read pages 25 and 26

* 25. “Well, that was a surprise. The words on this page are important. I thought the pigeon wanted a puppy, but he’s screaming when he sees one. Does he still want a puppy?”

26. Read pages 27 and 28

* 27. “I would ask the pigeon a question. I would ask him why he is scared of the puppy. I would ask him why he is scared of the puppy’s teeth. What do you think he would say?”
28. Read pages 29 and 30

* 29. “Is this how you drew a picture of the puppy in your mind?”

30. Read pages 31-32

<table>
<thead>
<tr>
<th>Following the Read Aloud</th>
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<tbody>
<tr>
<td>* 1. “We were thinking about the pigeon and how he never got what he wanted. He wanted to drive a bus, eat a hot dog alone, and stay up late. He didn’t get to do any of those things. This time he wanted a puppy and he got one. Was he happy?”</td>
</tr>
<tr>
<td>* 2. “Some teachers say, ‘you get what you get, and you don’t throw a fit’. Is it ok to not always get everything you want?”</td>
</tr>
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</table>

Conclude your read aloud the way you normally would.

Adapted from reading guides available at Heinemann, the International Reading Association, and Scholastic.
Thinking Strategies Protocol

Book: The Duckling Gets a Cookie!
Author: Mo Willems

Information for Teachers
1. Read the protocol as written.
2. Allow five seconds after questions to prompt again.
3. This is the thinking symbol. *When you see this, it is a reminder that you will provide children time to think about and respond to the question you have asked.
4. Allow responses until children are finished talking. You may participate in conversation with the children. Encourage all to be good listeners.
5. Make sure your students are ready to begin the read aloud.
6. You will be modeling and encouraging the use of thinking strategies.
7. You will be using open-ended questions and should expand children’s utterances and provide positive feedback.
8. Read with vocal and facial expressions, gestures, etc.
9. Bold text lets you, the teacher, know that a new section is starting.
10. Numbering tells you the sequence being followed in the section.
### Before the Read Aloud

**Model and Guide Practice**

Hold up the front cover of the book. Point to the title and read it.

*1. We are going to read *The Duckling Gets a Cookie!* While we read, we’re going to be monitoring meaning. Those are big words that mean knowing and understanding what you read. While I’m reading, think about what you know about the duckling and pigeon. I remember the duckling wanted the pigeon’s hot dog, so the pigeon shared. Will it be the duckling’s turn to share this time?*

2. Point to the exclamation mark. “We know this is an exciting mark.” Point to the question mark. “This mark is new. It’s an asking mark. The pigeon is asking if the duckling gets a cookie.”

3. “The picture on the front cover makes me hungry. I love cookies. I’m going to make a picture in my mind of my favorite cookie. It is a sugar cookie with pink icing and sprinkles. Make a picture in your mind of your favorite cookie. Tell me about your picture. What is your favorite kind of cookie?”

4. “Schema is what you already know. We know the pigeon asks for a lot things. Does he get what he asks for?”

5. “Let’s make an inference, a smart guess from what we know. The duckling wanted a hot dog, and he got one. How does it make the pigeon feel when the duckling gets what he wants?”

### During the Read Aloud

**Model and Guide Practice**

*1. “Remember, we are thinking about the time the pigeon shared the hot dog with the duckling. Now the duckling has a cookie. Will it be the duckling’s turn to share this time?”

2. Read the title page

3. “I can already see the pigeon has his hands on his hips. I remember from other book this means the pigeon is not happy.”

4. Read pages 1 and 2
5. Read pages 3 and 4

6. “I like Mo’s picture. I can tell the duckling is flapping his wings fast, because Mo
drew them three times and drew little lines. The duckling is flapping his wings fast,
because he’s excited. I also see he has excited eye, because they are big. What do you
do when you’re excited? Show me an excited face.”

7. Read pages 4 and 5

*8. “The duckling’s cookie has nuts. How is that different from the picture you drew of
your favorite cookie?”

9. Read pages 6, 7, and 8

10. “The duckling asked for a cookie politely. Politely means using your manners by
saying, ‘please’ and ‘thank you’.”

11. Read page 9

*12. “The pigeon is asking the duckling questions about the cookie. Why do you think
he is asking questions?”

13. “I remember in the hot dog book, the duckling started asking the pigeon a lot of
questions about his hot dog when he wanted some.”

14. Read pages 10 and 11

*15. “What do we know about Mo’s words when they look like this? Why does he
make them look different?”

16. Read pages 12 and 13

17. “The pigeon is asking, ‘why?’ I wonder why he is asking ‘why’. I think he might be
asking why he never gets what he wants.”

18. Read pages 14 and 15

*19. “Let’s make an inference, a smart guess from what we already know. Some times
the pigeon likes to trick us to get what he wants. I see he’s starting to cry. Do you think
he’s sad because he doesn’t get what he wants or is it another trick?”

20. Read pages 16 and 17

21. Read pages 18 and 19
22. Read pages 20 and 21

*23. “Do you remember how the duckling got the cookie?”

*24. “The pigeon asked the duckling if he cookie had nuts and how he got the cookie. What is an important question he hasn’t asked the duckling?

25. Read pages 22 and 23

26. “Well, that was a surprise. I think the duckling surprised the pigeon too. On this page the pigeon is still yelling. I don’t think he heard the duckling.”

27. Read pages 24 and 25

*28. “Here Mo drew a surprised face for the pigeon. Show me your surprised face.”

29. Read pages 26 and 27

*30. “How does the duckling feel after giving the cookie to the pigeon?”

31. Read pages 28-29

*32. “The duckling shared the whole cookie, and the pigeon finally got something he wanted. Are they both happy?”

33. Read pages 30 and 31

*34. “Will the duckling get another cookie? Why?”
### Following the Read Aloud Model and Guide Practice

*1. “We were thinking about the pigeon and the duckling sharing a hot dog and wondering if the duckling would share the cookie. Is it important to share with your friends?”  

*2. “What are some other ways you can make friends?”

Conclude your read aloud the way you normally would.

Adapted from reading guides available at Heinemann, the International Reading Association, and Scholastic.
Thinking Strategies Protocol

Book: Knuffle Bunny: A Cautionary Tale
Author: Mo Willems

Information for Teachers
1. Read the protocol as written.
2. Allow five seconds after questions to prompt again.
3. This is the thinking symbol. * When you see this, it is a reminder that you will provide children time to think about and respond to the question you have asked.
4. Allow responses until children are finished talking. You may participate in conversation with the children. Encourage all to be good listeners.
5. Make sure your students are ready to begin the read aloud.
6. You will be modeling and encouraging the use of thinking strategies.
7. You will be using open-ended questions and should expand children’s utterances and provide positive feedback.
8. Read with vocal and facial expressions, gestures, etc.
9. Bold text lets you, the teacher, know that a new section is starting.
10. Numbering tells you the sequence being followed in the section.

Before the Read Aloud
Model and Guide Practice

Have a copy of Don’t Let the Pigeon Stay Up Late! Find the picture where the pigeon is holding the stuffed bunny.

Hold up the front cover of the book. Point to the title and read it.

* 1. “We are going to read Knuffle Bunny: A Cautionary Tale. While we read, we’re going to be monitoring meaning. Those are big words that mean knowing and understanding what you read. While I’m reading, think about your favorite toy. What would you do if your favorite toy was lost?

2. “Today we are going to meet some new characters. The characters are the people and animals in a story. This is Trixie and her Knuffle Bunny. We have seen this bunny
before. Show the class the pigeon book and remind them of the illustration.

* 3. “Let’s make a picture in our heads. Draw a picture of your favorite toy.”

* 4. “Using your schema, what you know, tell me about your favorite toy?”

* 5. “Let’s ask Trixie some questions. Let’s see what she does with Knuffle Bunny.”

This question may need increased facilitation. If the students have minimal experience generating questions, you will need to do additional modeling and guide the development of their questions.

<table>
<thead>
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<th><strong>During the Read Aloud</strong></th>
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<tr>
<td><strong>Model and Guide Practice</strong></td>
</tr>
<tr>
<td>1. “Remember, we are thinking about our favorite toy and what we would do if it was lost.”</td>
</tr>
<tr>
<td>2. Look at the title page</td>
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<tr>
<td>3. “I see pictures of a mommy and daddy. This looks like Baby Trixie. In the big picture Trixie is hugging Knuffle Bunny. I can see she really loves him. I wonder where this picture was taken.”</td>
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<tr>
<td>4. Read pages 1 and 2</td>
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<tr>
<td>5. “An errand is a short trip to do something. Mommies and Daddies do lots of errands. They go to the store to buy food, they go to the gas station to put gas in the car, and they go to the post office to mail letters.”</td>
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<tr>
<td>* 6. “Trixie’s daddy is carrying a basket. Where do you think they are going?”</td>
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<tr>
<td>7. Read pages 3 and 4</td>
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<tr>
<td>8. “I’m noticing the pictures in Mo’s book. Parts of them have colors and parts of them do not. The part without colors looks like a photo. They are real photographs of apartments and a park.”</td>
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<tr>
<td>9. Read pages 4 and 5</td>
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</tbody>
</table>
| * 10. “Does anyone know what a laundromat is?” If no one answers or if you need to clarify – “A laundromat is a building with lots of washing machines and dryers. People take their clothes and wash and dry them at the laundromat. You put the clothes in, and
then the soap, and then money to make the washing machines and dryers work.”

11. Read pages 6 and 7

* 12. “Does anyone help their mommy or daddy with jobs around the house?”

* 13. “Let’s make a smart guess from what we know, an inference. Daddy is taking the clothes in the green basket and putting them in the washing machine. What else is in the basket? What do you think will happen to Knuffle Bunny?”

14. Read pages 8 and 9

* 15. “I’d like to ask Trixie a question. Do you have a question for Trixie? If not one responds or when they are done, “I would ask Trixie where Knuffle Bunny is? I would say, ‘how did you forget him?’”

16. Read pages 10 and 11

* 17. “We have seen Mo draw eyes like this before. He drew them on the pigeon. What does it mean when Mo draws big eyes? What does she realize?”

18. Read pages 12 and 13

19. Read pages 14 and 15

* 20. “There are lots of talking bubbles on these pages. Trixie is trying to tell her daddy about Knuffle Bunny. He doesn’t understand her. She is a little girl and doesn’t have ‘big girl’ words yet to talk. But we can look at the pictures and think about Trixie. How does she feel?”

22. Read pages 16 and 17

23. “Boneless doesn’t mean Trixie’s bones went away. I’m looking at the picture, and I know it means Trixie tried to fall down and not walk. She was throwing a fit to let her daddy know she was unhappy.”

*24. “Have you ever thrown a fit to let your mommy or daddy know you were unhappy?”

25. Read pages 18 and 19

* 26. “Why was her daddy unhappy too?”

* 27. “Draw a picture in your mind of a time when you were unhappy and throwing a fit. Does your mommy or daddy look like Trixie’s daddy?”
28. Read pages 20 and 21

29. “Trixie’s mommy is asking a smart question. I wonder how they will answer her question.”

30. Read pages 22 and 23.

31. “Look at his shirt. I see another character I know.”

32. Read pages 24 and 25

33. Read pages 26 and 27

* 34. “Well, that was a surprise. I remember Trixie’s daddy put Knuffle Bunny in the washing machine. Trixie looks like she is going to bawl again, that means cry really hard. We were thinking about how it feels when a toy is lost. Do you think Knuffle Bunny is really gone?”

35. Read pages 28 and 29

36. “Look at Trixie’s talking bubble. She is not saying ‘little girl’ words anymore.”

37. Read page 30
### Following the Read Aloud

*Model and Guide Practice*

<table>
<thead>
<tr>
<th><em>1.</em> “We were thinking about what we would do if a favorite toy was lost. Trixie and her daddy and her mommy had to look really hard for Knuffle Bunny. What do you do when your toys are lost?”</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>2.</em> “When I was little, I couldn’t ride my bike, but now I can. When you were little there were things you couldn’t do. But now that you’re big you can. What is something you couldn’t do when you were little but you can do now?”</td>
</tr>
</tbody>
</table>

Conclude your read aloud the way you normally would.
Information for Teachers

1. Read the protocol as written.
2. Allow five seconds after questions to prompt again.
3. This is the thinking symbol. *When you see this, it is a reminder that you will provide children time to think about and respond to the question you have asked.
4. Allow responses until children are finished talking. You may participate in conversation with the children. Encourage all to be good listeners.
5. Make sure your students are ready to begin the read aloud.
6. You will be modeling and encouraging the use of thinking strategies.
7. You will be using open-ended questions and should expand children’s utterances and provide positive feedback.
8. Read with vocal and facial expressions, gestures, etc.
9. Bold text lets you, the teacher, know that a new section is starting.
10. Numbering tells you the sequence being followed in the section.
### Before the Read Aloud

**Model and Guide Practice**

Hold up the front cover of the book. Point to the title and read it.

1. “We are going to read *Knuffle Bunny Too: A Case of Mistaken Identity*. While we read, we’re going to be monitoring meaning. Those are big words that mean knowing and understanding what you read. In this story some toys get confused because they look alike. Think about how you know which toys are yours.”

2. “Trixie looks like she’s growing up. I can tell she still loves Knuffle Bunny. I wonder how she knows Knuffle Bunny is hers.”

3. “Let’s make a smart guess from what we know, an inference. Trixie lost Knuffle Bunny when she was doing an errand, a job, with her daddy. I can tell from the picture she is out with her daddy again, and she has Knuffle Bunny. What do you think will happen?”

4. “Trixie’s daddy could not understand her words in the last book. Do you think he will be able to understand Trixie if there is a problem in this book? Why?”

5. “As we read the story, remember to look at Mo’s pictures. He uses drawings and real photographs on the pages in his books.”

### During the Read Aloud

**Model and Guide Practice**

1. “Remember, we are thinking about how we can tell which toys are ours when they get mixed up with other toys.”

2. Read the title page

3. “I remember these pictures from the other Knuffle Bunny book. I remember this picture was at the end when Trixie found Knuffle Bunny at the laundromat. I wonder if this big picture is a clue for this story. I’m going to remember it.”

4. Read pages 1 and 2

5. “Trixie is a big girl now. I think Amy and Meg are her friends. What do you think she wants to show her friends?”

6. Read pages 3 and 4
7. “Where are they be going? How do you know?”

8. Read pages 5 and 6

9. Read pages 7 and 8

10. “Trixie is in preschool, just like you. How does her room look like ours?”
    “How does Trixie’s room look different?”

11. “I’m looking at Trixie’s eyes. She looks surprised to see Sonja. I wonder why.”

12. Read pages 9 and 10

13. “Trixie thought she had the only Knuffle Bunny. How do you think she feel now
    that there are two? Are they the same?”

14. Read pages 11 and 12

15. “What happened in the afternoon to make it worse? What is the teacher doing with
    the bunnies?”

16. Read pages 13 and 14

17. “Look closely at the picture. I wonder if there will be a problem soon.”

18. Read pages 15 and 16

19. Read pages 17 and 18

20. “Did you notice the book on the floor?”

21. Read pages 19 and 20

22. “Mo made these words big. They must be important. What did Trixie realize that
    was so important?”

23. Read pages 21 and 22

24. “This is different for Trixie. In the other book she cried and tried to fall on the
    ground. In this story, she is using words. Do you think she’s still upset?”

25. Read pages 23 and 24

26. “Who is he going to call?”
27. Read pages 25 and 26

28. Read pages 27 and 28

*29. “Arrangements are plans. What arrangements did the daddies make?”

30. Read pages 29 and 30

31. Read pages 31 and 32

*32. “Look at the picture. What does exchange mean?”

33. Read pages 33 and 34

34. Read page 35

*35. “Here is the same picture we saw at the front. Was it a good clue about the story?”

**Following the Read Aloud**

*Model and Guide Practice*

*1. “We were thinking about how toys get confused and how we know which toys are ours? How did Trixie know she had the wrong Knuffle Bunny?”

*2. “Friends like to do things together. What do you like to do with your friends?”

3. Conclude your read aloud the way you normally would.

Adapted from reading guides available at Heinemann, the International Reading Association, and Scholastic.
Thinking Strategies Protocol

Knuffle Bunny Free: An Unexpected Diversion
By Mo Willems

Information for Teachers

1. Read the protocol as written.
2. Allow five seconds after questions to prompt again.
3. This is the thinking symbol. * When you see this, it is a reminder that you will provide children time to think about and respond to the question you have asked.
4. Allow responses until children are finished talking. You may participate in conversation with the children. Encourage all to be good listeners.
5. Make sure your students are ready to begin the read aloud.
6. You will be modeling and encouraging the use of thinking strategies.
7. You will be using open-ended questions and should expand children’s utterances and provide positive feedback.
8. Read with vocal and facial expressions, gestures, etc.
9. Bold text lets you, the teacher, know that a new section is starting.
10. Numbering tells you the sequence being followed in the section.
Before the Read Aloud

Model and Guide Practice

Hold up the front cover of the book. Point to the title and read it.

*1. “We are going to read *Knuffle Bunny Free: An Unexpected Diversion*. While we read, we’re going to be monitoring meaning. Those are big words that mean knowing and understanding what you read. While I’m reading, think about Trixie and how she feels about Knuffle Bunny. Sometimes we get too big to play with toys. What should you do with your toys when you get too big for them?”

*2. “Let’s make a smart guess from what we know, an inference. Trixie has lost Knuffle Bunny two times. What do you think will happen this time?”

3. “An unexpected diversion means you go somewhere on accident. This story will be about a trip Knuffle Bunny takes on accident. As we read the story, remember to look at Mo’s pictures. He uses drawings and real photographs on the pages in his books.”

During the Read Aloud

Model and Guide Practice

1. “Remember, we are thinking about our toys and what we do with them when we get too big to play with them anymore.”

2. Read the title page

3. “I remember these pictures from the other Knuffle Bunny book. I remember this picture was at the end when Trixie found Knuffle Bunny at the laundromat. I remember this is a picture of Trixie and her friend Sonja when they got the wrong Knuffle Bunny. I wonder if this big picture is a clue about this book.”

4. Read pages 1 and 2

*5. “Who are ‘Oma’ and ‘Opa’? Yes, they are Trixie’s Grandpa and Grandma. Have you visited anyone in your family?”

6. Read pages 3 and 4

*7. “Have you seen an airplane? Has anyone been on an airplane?”

8. Read pages 5 and 6
*9. “I’m already noticing a problem. Does anyone see a problem for Trixie?”

10. Read pages 7 and 8

*11. “What does Trixie realize?”
“What is she going to do? How do you think Trixie is going to act?”

12. Read pages 9 and 10

13. “I can tell by the picture that her daddy knows what the problem is.”

14. Read pages 11 and 12

15. “I remember in the last story, Sonja’s daddy called Trixie’s daddy on the phone. Sometimes you have to call people to learn something. Trixie learned Knuffle Bunny was still on the airplane and the airplane was gone.”

16. Read pages 13 and 14

*17. “Trixie looks sad in this picture, but her family wants to help her feel better. How does your family make you feel better when you are sad?”

18. Read pages 15 and 16

19. Read pages 17 and 18

*20. “Trixie’s family tried lots of things, but she was still sad. She loved her Knuffle Bunny. I see ‘Oma’ and ‘Opa’ are going somewhere else. They have a plan. What do you think they are going to do?”

21. Read pages 19 and 20

*22. “I want to ask Trixie a question about her new toy. What can we ask her?”
This may take some additional modeling and facilitating. Try to help students form questions about why it didn’t make her feel better or if she liked anything about it.

23. Read pages 21 and 22

*24. “Why did Mo draw Knuffle Bunny flying? Why did he draw him in so many places with so many other kids?”

*25. “Why did Trixie feel better when she woke up?”

26. Read pages 23 and 24
27. Read pages 25 and 26

28. Read pages 27 and 28

* 29. “What does Trixie notice?”

30. Read pages 29-30

* 31. “Trixie is very happy, but the baby behind her is very sad. Use what you know, your schema. You know Knuffle Bunny makes Trixie happy. What could help the baby?”

32. Read pages 31 and 32

33. Read pages 33 and 34

* 34. “Why was everyone happy on the plane?”

35. Read pages 35 and 36

36. You do not need to read the final pages of Trixie as an adult.

**Following the Read Aloud**

* Model and Guide Practice

*1. “We were thinking about what you can do with your toys when you get too big for them and don’t play with them anymore. Did Trixie make a good choice with Knuffle Bunny?”

*2. “What will happen to Knuffle Bunny now?”

Conclude your read aloud the way you normally would.

Adapted from reading guides available at Heinemann, the International Reading Association, and Scholastic.