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Promoting At-Risk Preschool Children's Comprehension through Research-Based Strategy Instruction

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—————— **Abstract** ——————

Young children living in poor urban neighborhoods are often at risk for reading difficulties, in part because developing listening comprehension strategies and vocabulary knowledge may not be a priority in their prekindergarten classrooms, whose curriculums typically focus heavily on phonological awareness and alphabet knowledge. Prereading comprehension strategies are instrumental in developing skilled readers and significant to future academic success; their absence in preschool classrooms may contribute to challenges children face while learning to read. This article examines an exploratory investigation in two low-income public prekindergarten classrooms where children received an eight-week intervention to develop intentional comprehension strategies. Implications of this work for teachers and teacher educators are also addressed.

Introduction

Preschool has taken its place as a vital step in children's educational development. In 2007, 74% of four-year-olds attended some kind of preschool; 48% of those attended a program that considered income as a basis for enrollment (Barnett & Yarosz, 2007). Having large numbers of low socioeconomic status (SES) children attending preschool is very positive, however, benefits of preschool are ultimately tied to the quality of instruction, a national issue plaguing preschool programs (Barnett, 2007). This is particularly evident in the teaching of early literacy skills (Dickinson & Caswell, 2007) as providing effective, well-educated teachers, research-based curricula,

and literacy rich classroom environments is particularly important for success with children in poverty (Early, Maxwell, & Burchinal, 2007; Justice & Vukelich, 2007).

Evidence of predictable gaps exists between lower and higher SES children's knowledge and achievement in formal school settings (Whitehurst & Lonigan, 1998; Zill, Resnick, & Kim, 2003; Neuman, 2007). Before and after entering school poor children may have limited access to print materials and home learning opportunities (Constantino, 2005; Neuman & Celano, 2001) and their caregivers may face numerous challenges in addition to economic disadvantage. These include low levels of education, multiple jobs, single-parent households, and higher levels of depression among parents that may make it difficult for them to assist their children in learning (McLoyd, 1998; Ceballo & McLoyd, 2002). Children in lower SES brackets may also be less prepared for school due to having more limited vocabulary and background knowledge than those from more economically advantaged homes (Celano & Neuman, 2008; Hart & Risley, 1995; Dickinson, Cody, & Smith, 1993). Considering all of the possible obstacles to the literacy learning of children from low-income homes, it is apparent that a more well-rounded literacy curricula might best enhance their early education. In addition to developing phonological awareness and alphabet skills, a strong emphasis on building background knowledge, vocabulary, and comprehension strategies is imperative (Dickinson & Tabors, 2001; Hart & Risley, 1995; Neuman & Celano, 2006).

In the last two annual International Reading Association's "What's Hot Reports" (Cassidy & Cassidy, 2008; 2009), more than 50% of survey respondents reported comprehension as a hot topic and all agreed it should be extremely hot. Yet little comprehension instruction is observed in preschool classrooms (Neuman & Celano, 2001). In fact, many early childhood educators have not received training in teaching comprehension strategies and therefore, may not understand their value or include them in early literacy curriculum (Pearson & Duke, 2002). Typically, when children are taught comprehension strategies, instruction occurs during interactive storybook reading (Cornell, Senechel, & Brodo, 1988; McGee & Schickedanz, 2007; Paris & Paris, 2003) and there continues to be a lack of structured curricula focusing on strategy development. In most cases, emphasis in early literacy continues to focus on instruction in phonological awareness, alphabetic principle, and increasing vocabulary in number and complexity (Fischel et al., 2001) but, to become readers, not just decoders, children need to learn how to comprehend. This instruction must begin at a very young age, rather than when children enter primary grades (Neuman, 2006). Dooley (2010) reports on the nature of emergent comprehension and what kinds of meaning children construct when they encounter books.

Emergent comprehension refers to the behaviors and skills that children develop prior to conventional text comprehension, which are more flexible and child-driven than adult comprehension behaviors. Dooley (2010) states, "From early interactions, children develop knowledge about how to comprehend in ways that are essential to conventional reading comprehension development" (p. 120). It is clear from this research that comprehension is an emergent prereading skill that should not be left until the middle elementary years.

A Preschool Foundation for Comprehension Strategies

Gamsee, Bloom, Kemple, and Jacob (2008) revealed that on average, across participating sites, Reading First (U.S. Department of Education, 2002) did not increase the percentages of students whose reading comprehension scores were at or above grade level in the first, second, or third grade as fewer than half of the students in these grades were reading at or above grade level. This news is devastating for children who demonstrate that they cannot understand short paragraphs typically appearing in age-appropriate books, supporting the fact that comprehension strategy development cannot wait until children learn to read. Many children in the early elementary grades, even those receiving interventions such as Reading First, are struggling with comprehension strategies. Lynch et al. (2008) find skills used by preschoolers and kindergarteners during comprehension of narratives read aloud (such as inferencing, integrating existing knowledge, and retelling) are similar, though not as sophisticated, as older children's strategy use during reading comprehension. "In summary, the evidence we have on preschool children suggests that they engage in some of the same comprehension processes as do older children and adults" (Lynch et al., 2008, p. 332). Establishing these skills in the preschool years may help lay the foundation for future reading success.

What is Comprehension?

When describing young children's comprehension, Dooley and Matthews (2009) use the term emergent comprehension, saying, "young children, prior to conventional text comprehension, engage in personally meaningful experiences that stimulate use of meaning-making strategies with the potential to affect later reading comprehension" (p. 273). When children are engaged in comprehension, among other things, they are relating what they are trying to learn from stories or conversation to what they already know and have done. "Children rely on prior knowledge to interpret and construct meaning about what they listen to" (Morrow, Freitag, & Gambrell, 2009, p. 41). Comprehension also requires children to draw on contextual and world knowledge that cannot be found in a single word or sentence (Lonigan &

Whitehurst, 1998) as it is the outcome of connecting information, ideas, images, and known knowledge to form coherent ideas and concepts. "Children's understanding of books that they read, hear and view is an active, constructive meaning-making process that requires the coordination of various skills, knowledge, and strategies" (Paris & Paris, 2003, p. 2). When children are able to read, meaning is created by interacting with words in the text. However, before children read, ideas and concepts are primarily linked through listening and personal interaction (Dickinson & Tabors, 2001; Teale, 1985; Morrow, 1988). The focus of this article is on narrative listening comprehension. Lynch et al. (2008) state:

> To fully comprehend a narrative, children must not only understand and encode the individual events in the story but also conceptually connect different parts of the narrative. This requires, among other skills, 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. (p. 328)

Although we know children need to decode and read fluently to become successful readers (Adams, 1990; Fuchs & Fuchs, 2005), reading is not just about being able to decode words on a page. If a child has limited vocabulary and does not understand what he/she is decoding, then little has been accomplished to increase the knowledge or motivation to engage in further reading (Biemiller, 2006; Snow, Burns, & Griffin, 1998). Teaching young children age-appropriate emergent comprehension strategies provides a scaffold to reading comprehension strategy development and future success in reading comprehension (Dooley, 2010; Dooley & Matthews, 2009; Paris & Paris, 2003; Pressley, 2002).

What Do We Know About Predictors of Future Reading Achievement?

Studies have shown that current early literacy curricula can improve children's basic early literacy skills, but few studies have accurately measured preschool comprehension improvement after comprehensive comprehension curriculum interventions (Fischel et al., 2007; Lonigan & Burgess, 2000). The National Early Literacy Panel (NELP) (2008) has supported the fact that knowledge of basic skills (such as alphabet knowledge and phonological awareness) is among the top predictors of later reading achievement. However, the report also states that there is a dearth of well-constructed empirical studies measuring prereader comprehension, resulting in difficulty demonstrating empirical support for its value as a predictor and inclusion in early literacy curriculum (National Early Literacy Panel, 2008). Most assuredly,

strong support for teaching basic skills is, in part, derived from ease of assessment as it is much easier to accurately measure constrained skills such as alphabet knowledge, phonological awareness, and concepts about print allowing for clearer, sounder empirical studies (Paris, 2005; Paris & Paris, 2006). But comprehension is composed of a multitude of unconstrained skills, thus, "comprehension in its different forms cannot be quantified and assessed easily along a single dimension—unlike phenomena such as height, weight, and perhaps even basic reading skills such as vocabulary and phonological awareness" (Kendeou et al., 2005, p. 92).

Should Comprehension Strategies Be Taught Simultaneously with More Traditional Skills?

Paris and Paris (2003) disagree with the common claim that basic skills must come first, stating that this approach "overshadows comprehension by ignoring how cognitive processes such as schema activation, context, strategy use, and inference are involved in early reading" (p. 41). Instruction targeted toward developing unconstrained skills such as comprehension need not wait until more traditional, or constrained, skills have been mastered. In a theoretical discussion of differences between constrained and unconstrained literacy skills, Paris (2005) states, "unconstrained skills such as vocabulary and comprehension develop before, during, and after constrained skills are mastered so there is no evidence to warrant instructional priority of constrained skills over unconstrained skills" (p. 200). Unconstrained literacy strategies must be established congruently and purposefully along with the more traditional literacy skills children acquire in preschool. Kendeou et al. (2005) agree, stating that "comprehension skills develop simultaneously with, rather than following, basic language skills" (p. 91). Their longitudinal work with 4-8-year-olds demonstrates that comprehension strategies developed early significantly predict later reading comprehension. This finding provides strong evidence for including comprehension strategy instruction for prereaders.

Which Comprehension Strategies Should be the Focus of Preschool Instruction?

Research has demonstrated the need for the teaching of specific strategies to young children to help develop comprehension abilities in preschool and the early elementary years (Myers, 2005; Paris & Paris, 2007). Four strategies are most commonly identified in this literature as increasing listening comprehension for prereaders and contributing to future reading success: (a) constructing understanding of story language and structure by connecting ideas from a story to prior knowledge, (b) predicting what will happen next in a story, (c) retelling story sequences, and (d)

linking new words to known concepts and experiences to assist with understanding (DeBruin-Parecki, 2009; DeBruin-Parecki & Squibb, 2010; McKeown & Beck, 2006; Morrow, Freitag, & Gambrell, 2009; Paris & Paris, 2003; van Kleeck, 2008). Further, young children need to learn to transfer these strategies to varied genres and real life learning and all four strategies have been shown to relate directly to comprehension growth (Morrow, Freitag, & Gambrell, 2009; Teale, 2003; Teale & Martinez, 1996). What follows is a brief discussion of each strategy.

Connecting Ideas to Prior Knowledge

Connecting ideas to prior knowledge is how children first learn to comprehend. It requires children to make sense of ideas and encourages them to reflect on the content of stories and find ways to make it relevant by "building links between the text and their prior knowledge to fill in information that is left implicit" (Brandao & Oakhill, 2005, p. 698). Children who are skilled in comprehending also integrate information from the story with relevant background knowledge (Brandao & Oakhill, 2005). To increase comprehension, teachers can acknowledge students' comments and point out similarities and differences in personal knowledge while directly connecting that knowledge to the story. This is particularly important when children are expounding on personal knowledge in a group setting because information shared that is irrelevant to the story may disrupt comprehension (Beck & McKeown, 2001).

Prediction

Vital to comprehension is "the construction of the text one is reading" (van den Broeck et al., cited in van Kleeck, 2008, p. 628). One way to accomplish this is through prediction; young children listening to or having heard stories can go beyond the information provided in the book to fill in ideas needed to understand and elaborate on the story. Preschoolers are clearly able to engage in this strategy to demonstrate their capability to comprehend (van Kleeck, 2008). Shared book reading and focused activities provide support and opportunities to develop young readers' ability to make predictions.

Retelling

Retelling a story compels the listener to revisit what was heard and construct a coherent representation of it (Cairney, 1990). When children retell a story, either in part or entirely, they are being asked to recall key elements from the beginning, middle, and/or end of a story, including characters and plot, solving problems, and addressing solutions (Hansen, 2004). Very young children often recall a stream of information about a story when asked, without regard for sequence of ideas in the story. As this skill develops, children start to provide more cohesive and sequential

retellings that demonstrate their clear understanding of organization and story content. Teaching children how to retell in this manner ultimately leads them to deeper comprehension (Pellegrini & Galda, 1982).

Linking New Words to Known Concepts and Experiences

For children to progress in their comprehension strategy development, they need to acquire a strong vocabulary base as limited vocabulary can hinder comprehension (Biemiller, 2003). Parents and caregivers differentially impact young children's vocabulary acquisition, based on many factors such as their educational level and economic status. Children can learn new and rare words in the context of story reading (Dickinson & Tabors, 2001) when teachers define them, provide examples of other circumstances where the word might be used, allow children to own words through their self-generated examples, or add the vocabulary to everyday classroom conversations. As children's vocabularies grow, they will be able to better understand concepts and words in stories leading to deeper comprehension of ideas and storylines (Beck & McKeown, 2007). When children's vocabularies include a wide range of words and concepts, they also are better able to comprehend stories being read aloud and, in the future, as they are reading (Biemiller, 2003).

Teacher Education and Professional Development

Young children are unlikely to learn comprehension strategies if they are not intentionally taught. Intentionality of instruction and recognition of teachable moments by teachers is vital (Landry, Anthony, Swank, & Monseque-Baily, 2009) to help assure that children understand and use what is being taught: in this case, strategies to build comprehension processes. Unfortunately, intentional teaching of comprehension strategies to preschool children is often lacking because teachers may not have had the opportunity to learn about this type of instruction, either in their preservice education or during regular professional development. Cunningham, Zibulsky, and Callahan (2009) state, "... conversations about building teacher knowledge through preservice programs and professional development have tended to concentrate on the needs of elementary school teachers and students, rather than the needs of preschool teachers and their younger learners" (p. 48).

While the strategies used in this study may not appear to be innovative, they are rarely taught intentionally in the classroom (Neuman, 2006). This study not only examined young children's progress in learning comprehension strategies, but we also spent intensive time working with teachers and assistants to provide knowledge about comprehension strategy instruction, building on teachable moments, and integrating these multiple strategies throughout the school day in varied contexts.

"Although teacher outcomes are considered an intermediate process within intervention research, they represent the primary mechanism through which an intervention achieves its effect" (Pence, Justice, & Wiggins, 2008, p. 330). In order for implementation of a curriculum to be effective, teachers need to value what is being taught and receive frequent, consistent, and intensive professional development (Dickinson & Caswell, 2007). In addition, coaching from highly qualified and experienced educators can assist teachers in understanding strengths and recognizing areas for improvement (Rodgers & Rodgers, 2007). Teacher response journals linked to daily implementation of curriculum allow for reflection on practice, which moves teachers toward embracing more effective instructional methods (Gilrane, Russell, & Roberts, 2008).

Implementing a Comprehension Strategy Curriculum

This exploratory investigation involved implementation of an eight-week research-based comprehension strategy curriculum to examine the value of intentionally teaching the four previously discussed strategies to prekindergarten students, particularly those at risk of low achievement. Upon investigation of studies teaching multiple comprehension strategies to children similar to those taught in this investigation, it was found that studies ranged in both intensity and frequency of intervention (Palinscar & Brown, 1984; Paris & Paris, 2007; Sporer, Brunstein, & Kieschke, 2009). Length of studies ranged from 25 days to approximately 24 weeks for interventions focused on strategy instruction, and intensity most often varied from one to three sessions per week. This investigation took place over eight weeks, with three sessions per week for a total of 24 sessions. Each session included a whole group reading session and a small group activity.

Participants

A pre- and posttest design was used to investigate effects of comprehension strategy instruction for a sample of low-socioeconomic prekindergarten students. Participants were 30 prekindergarten children in an urban Mid-Atlantic Title 1 public school full-day program. The sample consisted of 13 males and 17 females, average age 4.5 years. The sample included 25 African Americans, 1 Caucasian, 2 Hispanics, 1 Asian, and 1 student of Middle Eastern descent.

The intervention was implemented in two classrooms, each with 15 children, one lead teacher, and one paraprofessional. Six prekindergarten teachers were recommended for participation by the principal. Two teachers were selected for this investigation, being well matched on factors such as years of experience and education

level, both having continued coursework past the Bachelors degree level including some coursework focused on literacy. Literacy instruction is a top priority for the district; however, comprehension strategy instruction was not a focus of the curriculum prior to the intervention.

Materials and Procedures

The comprehension strategy curriculum was designed to target development of four research-based comprehension strategies: connection to life, prediction, re-telling, and increasing vocabulary, and integration of these strategies. Lessons were developed by the authors as part of a larger comprehension curriculum designed to supplement the existing educational materials provided by the district. The lessons presented during this intervention comprise the first of four thematic units within the larger curriculum. Each week of this intervention was centered on the theme of "Friendship" using one of eight selected storybooks (see Table 1).

Table 1. *Comprehension Strategy Instruction*

Comprehension Strategy Instruction		
Week	**Strategy**	**Practice**
1	Connection to Life	Books with relevant themes and plot chosen, whole group/activity-based small groups. Student-generated oral, pictorial, and print experiences connecting text to students' lives.
2	Vocabulary	Books and target words chosen to enhance comprehension of story; whole group/activity-based small groups. Focus on both teacher-generated and child-generated definitions, including non-text-based contexts of target words. Instruction delivered using word cards, word walls, and activity-based review.
4	Prediction	Use of predictive stories, whole group/activity-based small groups. Priority given to using evidence to support predictions and evaluation of predictions based on evidence.
5	Retelling	Use of stories that provide multiple opportunities for re-telling, whole group/activity-based small groups. Use of story-based sequencing cards, dramatic interpretation, manipulatives, and props.
3	Integration of Connection and Vocabulary	Books are chosen to facilitate integration of strategies, group/activity-based small groups, child author and illustrator, art activities, songs and drama, scavenger hunt, and activities designed to increase background knowledge.
6	Integration of Retelling and Prediction	
7 & 8	Integration of All Strategies	

Comprehension strategy instruction took place in the first half of the school day, three days per week, for eight weeks (25% of the school day). Project teachers presented 40 minutes of whole group instruction in the context of storybook reading, including vocabulary instruction on target words drawn from the week's story, followed by 30 minutes of small group activity-based instruction directly related to the target strategy/s being taught that day. Researchers presented lessons and small group activities to project teachers during weekly 90-minute professional development sessions, which included feedback and coaching specific to teachers' instruction. A research team member was present daily observing, videotaping, and writing field notes in each classroom during comprehension instruction and activities. A full day of professional development preceded the first week's lesson and served to orient project teachers to comprehension strategy instruction and target strategies and books serving as the focus of instruction.

Whole group lessons included vocabulary introduction, shared book reading, and interactive discussion with children. Selected vocabulary was introduced to children during whole-group lessons using cards with pictures as well as the written word. Target words were selected from curriculum storybooks based on being rare words unlikely to be known to children, yet integral to comprehension (e.g., *luminous, admiration, splendid*). An average of 7 words per book was taught, for a total of 56 vocabulary words. Project teachers introduced the word and provided a children's dictionary definition as well as a simplified version of the meaning. Children were asked to give a "thumbs up" when they heard the word during read-alouds and when they did this, they were asked to contribute what they remembered and knew about the word. In addition, target words were integrated into multiple classroom contexts and used by teachers and children whenever possible throughout the day (for example, one teacher reported her children using the target word *navigation* while walking to the cafeteria, library, etc.).

Shared reading of the chosen weekly book took place each day of instruction. Books were either read repeatedly or sectioned into three parts so one book was read over the course of three weekly instructional sessions. Interactive discussions included specific strategy development and practice with weekly target strategies or integration of strategies. For example, children collaboratively retold sections of the book that had been read, and practiced predicting and evaluating their predictions about what might happen next in the story. Specific focus was placed on developing target strategies through multiple examples and applications within and between selected books.

The 30-minute small group activity sessions that immediately followed whole-group instruction were designed to link specifically to the week's target strategy or strategy integration. Children worked closely with teachers or assistants on these activities such as a school-based scavenger hunt where children made predictions based on evidence and a dramatic retelling of the first part of *The Happy Lion* (Fatio, 2004) (See Table 2 below for complete lesson).

Table 2. *Example of Daily Lesson*

Week 4: Day 1: The Happy Lion by Louise Fatio
Target Strategy: Retelling
45 Minutes Whole Group
• Teacher begins with a review of the concept of friendship, using characters and vocabulary from previous books and inviting children's ideas. • Teacher previews vocabulary for today's reading using cards with pictures and printed words. Children are told to "thumbs up" when they hear the word in the story. The target words are: bandstand, moat, tidbits, as well as French words: bonjour, Monsieur, Madame, and au revoir. • Teacher will then read pages 1-7 (ends with lion strolling down path away from zoo). • Teacher asks children questions such as: "Do you think the lion is happy in his home in the zoo?" "Would you like the animals in the zoo to come and visit you?" • To emphasize the friendship theme, teacher asks about the little boy, Francois. • Teacher asks children if they know the meaning of the French words as they hear them in context. If they don't teacher will explain.
45 Minutes Small Group
• Teacher will take a small group of children into the hall and provide them with props like a lion mask, school books for Francois, a hat for the schoolmaster, knitting for Madame Pinson, instruments for the band, and something representing a door for the lion to escape such as a hula hoop. • Children will retell the part of the story they have already heard and will describe what they are acting out. They can do this several times, switching roles.

Measures

Child Measures

To measure comprehension strategy development, the Early Literacy Skills Assessment (ELSA) (Cheadle, 2007), a reliable and valid tool designed to be implemented as a pretest and posttest, was administered. ELSA is different and appropriate in that it is a comprehensive tool that includes measurement of comprehension as a primary early literacy skill measuring four components of early literacy: comprehension, phonological awareness, alphabetic principle, and concepts about print. Each component is reported as a separate score. There is no total score for ELSA, as an aggregate score with a child doing well in one area would overshadow difficulties

in another. Although the entire ELSA was administered, for this investigation, only the comprehension portion of the tool was analyzed (reliability .83 pre; .87 post). Within the comprehension scale, ELSA measures three research-based strategies: connection to life (two questions), prediction (four questions), and retelling (two questions). Scores are determined by the number of relevant ideas a child provides. ELSA is constructed to resemble a children's storybook with items embedded within the storyline so the child's experience is that of a one-on-one shared reading with an adult. ELSA was administered pre and post by four graduate level teacher education students from a local university trained to interrater reliability at a level of .92 using the ELSA Training DVD.

Vocabulary was measured using a verbal definition task in which children were asked to tell "what they know about" a target word, and their answers were recorded verbatim. Twenty-one of fifty-six words taught during the unit were randomly selected after being separated into nouns, verbs, and adjectives/adverbs yielding an even distribution of each word type. Children were not tested on all 56 words due to issues related to appropriateness of assessment length for 4-year-old children. Children's responses on the vocabulary task were evaluated independently for accuracy by two research team members, with an interscorer reliability of .97.

Teacher Measures

Teachers kept response journals (TRJ) documenting their experiences implementing the curriculum. They rated each whole group and small group instructional period by answering three questions on a Likert scale of one to five with five representing highly successful, and one representing not successful at all. Questions were: (a) Were you able to promote understanding of targeted comprehension strategy/s? (b) Did children use targeted or previously taught comprehension strategies successfully? and (c) How interested/involved were children with the activity? In addition, two research team members, trained to use an observation checklist reliably, gathered curriculum fidelity data. Checklist items varied per strategy, and example items included: "Defines the concept of prediction with children and provides a number of examples of predictable events" and "Assists children in making predictions related to real life experiences during small group time."

What Were the Results of Teaching Comprehension Strategies to Preschool Children?

Pre and Post Comparisons

ELSA was administered to all students before instruction began and again after completion and students' comprehension strategies were assessed in retelling,

prediction, and connection to life categories. A total comprehension score was generated by combining each individual comprehension category score. Paired samples t-tests were employed to compare students' comprehension strategy growth over time. Bonferroni corrections were implemented due to use of multiple t-tests and results remained consistent. Number of items was controlled for in total comprehension score analysis with weighted scores. These results indicated a statistically significant difference between total pre- and post-ELSA scores as well as for each individual category (see Table 3).

Table 3. *Pre/Post ELSA Comparisons*

Target Strategy	Pretest Mean	Pretest Stan. Dev.	Posttest Mean	Posttest Stan. Dev.	P (Statistical Significance)
Prediction	4.61	3.9	7.14	4.09	.005**
Retelling	2.18	2.4	3.96	5.8	.026*
Connection to Life	2.82	2.49	4.57	2.96	.005**
Comprehension Total	9.61	7.38	15.68	7.62	.000**

*- Statistically significant at the α = .05 level.
**- Statistically significant at the α = .01 level.

Vocabulary

Vocabulary was assessed using a simple definitional task at posttest only, since target words were rare and unlikely to be known. Analyses conducted considered the entire sample as well as comparing data by teacher and word type (noun, verb, adjective). Because only 21 randomly selected words, equivalent numbers of verbs, nouns and adjectives, out of the total 56 learned were tested due to assessment length, scores ranged from one to twenty-one items correct. On average, children learned 11 words each (53.9% correct on the assessment), and their learning was consistent across word type and teacher. Although the simple definitional task used in this exploratory investigation was not a standardized measure, children's vocabulary growth is encouraging. As a point of comparison, Biemiller & Boote's (2006) more rigorous review of 13 varied vocabulary instruction studies with children in grades K-2 demonstrated children's vocabulary grew at a rate of 9% to 26%, depending on particular designs and interventions. When asked about children's learning of new vocabulary, one of the classroom teachers commented, "The children are making life connections—instead of learning words like *listen* or *look*, they are learning harder words. It is amazing and I was worried especially

about words like *phosphorescent*. I was thinking they will never be able to learn those words, and they are still using them."

Teacher Response Journals

Analyses aggregating all question data from Teacher Response Journals (TRJ) indicate teachers felt instruction and student response was highly successful overall, with whole-group instruction being relatively more successful in implementation than small-group instruction. Although this data is self-reported and may be influenced by social desirability, it is clear from a closing focus group session with project teachers (conducted by a third party) that teachers responded positively to the curriculum overall.

Below are a few quotations from teachers in that focus group that reflect how they felt about instruction.

> The friendship unit, the whole thing, is so beautiful. It shows about building relationships and they're learning so much. They talk about everything that was going on in the books and connect it to their lives saying how we wouldn't do certain things to our friends. We don't treat our friends that way.

> I have noticed right away that they can definitely sequence the events in stories now. They make lots of connections to their real lives. Some stories really brought them into the book and they are now tying the books together and recalling what happens from one book to another.

Curriculum Fidelity Checklists

The research team used curriculum fidelity checklists each time they observed in the classroom. These research-based checklists focused on daily target strategies. Overall, teachers implemented curriculum effectively throughout instruction. Results indicate fidelity to curriculum occurred during 95% of the intervention. This reflects an average of the two teacher's scores with one scoring 94% and the other 96%.

Discussion

Results of this curriculum implementation are very encouraging. Hearing children from low socioeconomic backgrounds using advanced vocabulary easily and fluently; understanding how to use evidence to make predictions; knowing the difference between beginning, middle, and end of a story; and recognizing how book content relates to their own lives has demonstrated that they can and do learn

comprehension strategies when provided with relevant and intentional instruction and meaningful experiences. Both observation and implementation results provide reasons to move forward to designing a larger research study encompassing multiple classrooms of diverse children that will include both experimental groups and comparison groups. In particular, a study with a comparison group would provide more rigorous empirical evidence as to the impact of this intervention.

Implications for Teachers and Teacher Educators

Research over the past decade indicates that there is critical need to improve the support that preschool teachers receive in emergent language and literacy instruction, both before they enter the classroom and as they develop as professionals (Dickinson & Caswell, 2007). The federal government's establishment of the Early Reading First (U.S. Department of Education, 2003) program in 2003 demonstrates that this need is especially great for teachers working with prekindergarten children from low socioeconomic backgrounds. Given the importance of effective early literacy instruction, here are some points of consideration for individuals working directly with teachers and teacher candidates:

1. Teacher educators and those conducting professional development at the elementary level would be well served to address the developmental continuum of literacy by beginning with strategies for prereaders, especially the development of comprehension strategies, which are often overlooked.

2. Incorporate research-based training and professional development specifically targeted toward beginning and prereading development, alongside traditional strategies for helping struggling readers as they move through the elementary years.

3. Field observation of teachers and teacher candidates can inform teacher educators about the current comprehension instruction being implemented in prekindergarten classrooms, information that can be used to guide college-level instruction and teacher professional development.

Storybook reading is one of the most common activities in prekindergarten classrooms and presents an excellent opportunity for the intentional teaching of comprehension strategies. For currently practicing teachers of young children, deliberate preparation for strategy instruction during book reading is an important part of the lesson planning process. The following steps are practical suggestions for

teachers of young children as they are planning lessons to implement comprehension strategy instruction:

1. Select a book in advance with rich illustrations, a well-developed plot, and several rare words. Understanding vocabulary will contribute to comprehension of the story.

2. Review the book ahead of time to determine opportunities to engage children in using comprehension strategies such as prediction, retelling, or making connections to their lives and other books. Keep in mind that you don't need to wait until the end of a story in order to ask a retelling question.

3. As you plan, choose a few places in the story to ask open-ended questions that require the children to give interpretive answers, rather than "yes/no" answers or answers that can be drawn directly from the story or illustrations ("What color is Gabriela's hat?"). Prediction questions are excellent examples of interpretive questions ("What are some of the things that Andy might put in his bag?").

4. During book reading, encourage relevant discussion and practice focusing children's responses on the topic at hand, rather than allowing the conversation to wander too far from the lesson's focus. This is also a good opportunity to ask questions that require children to make connections outside of the classroom ("When do you feel scared, Tanisha?").

Conclusion

The comprehension strategy curriculum implemented in these public prekindergarten classrooms developed four research-based strategies, and also taught children to integrate these strategies so they were able to begin interacting with and understanding stories successfully. The types of strategies that children learned through these lessons are similar to those used by older children in their independent reading. In this way, comprehension strategy instruction using stories read aloud has the potential to lay the foundation for young children's future reading skills.

"Waiting to intervene until children are in the third or fourth grade and are experiencing difficulties with reading comprehension does not seem a viable solution when we know that achievement gaps are firmly established before children

enter school' (van Kleeck, 2008, p.628). Comprehension strategy development is crucial for children from all sociodemographic backgrounds, however it can be particularly instrumental for children who have less exposure to shared book reading prior to kindergarten entry. Children who have high quality book sharing experiences in the preschool years bring a wealth of background knowledge and a familiarity with story structure that facilitate future comprehension strategy development. For children who do not have these high quality experiences, it is even more important for these skills to be intentionally fostered in prekindergarten classrooms.

Work focused on comprehension strategy development is an important piece of the puzzle for closing the achievement gap for low SES children (Teale, Paciga, & Hoffman, 2007). This work should help develop teachers' skills and instructional intentionality and also help give children tools they need to become more competent in comprehension (Neuman, 2006). As one of our teachers said, "The children have really grown in so many areas, and I have grown along with them. I learned something new when the kids were learning. I never thought they could learn all these things, remember them, and use them all the time. It benefited all of us."

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