The Efficacy of a Professional Development Program to Enhance Preschool Educators’ Ability to Facilitate Conversation During Shared Book Reading

by

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A thesis submitted in conformity with the requirements for the degree of Master of Science
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Abstract

This study investigated the effects of a shared book reading professional development program on preschool educators’ ability to engage children in book-related conversations and promote word learning. 20 preschool educators were video-recorded reading two books to a small group of children at pre- and posttest eight weeks apart. Educators in the experimental group (n = 10) participated in professional development that included classroom instruction and individualized coaching. The control group remained on the waitlist. All video-recordings were transcribed and coded. Results indicated that educators in the experimental group included significantly more questions, responsive statements, and lexical diversity in their book-related talk compared to the control group. Further, they facilitated longer book-related conversations and had more long conversations (i.e., five turns or longer). Finally, conversations that included inferential talk resulted in the longest conversations. These findings suggest that professional development can enhance educators’ responsiveness during shared book reading.
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Chapter 1

1 General introduction

In recent years policy makers and researchers have increasingly focused their attention on the importance of the preschool years for putting young children on a trajectory for language and literacy success (National Early Literacy Panel, 2008; National Institute of Child Health and Development (NICHD), 2000, 2002; Peisner-Feinberg, Burchinal, Clifford, Culkin, Howes, Kagan, & Yazejian, 2001; Stanovich, 1986). One means of optimizing children’s preschool experiences is to ensure high quality preschool programs. This is a particularly important objective for children who are from low income homes as these children are more likely to start formal schooling without the language skills necessary to support literacy development (Biemiller, 2006; Wasik, Bond, & Hindman, 2006).

High quality preschool programs have the potential to promote language learning and compensate for an impoverished home language environment for those children considered most at risk (Ramey & Ramey, 1998). Prior studies have shown that the quality of preschool programs predicts young children’s developmental outcomes in language (National Institute of Child Health and Human Development (NICHD), 2000), cognition (Burchinal, Roberts, Riggins, Zeisel, Neebe, & Bryant, 2000), social-emotional skills (Peisner-Feinberg et al., 2001), school-readiness (NICHD, 2002), and literacy achievement in the elementary grades (NICHD, 2005). The NICHD - Early Child Care Research Network’s longitudinal study reported that the most important aspect of quality that predicted these enhanced child outcomes is the degree to which educators asked questions, responded to children, and encouraged children’s talk (NICHD-ECCRN, 2002). In other words, the educators’ ability to facilitate conversations with children is a key feature of program quality that accounts for these enhanced child language outcomes. Accordingly, it is imperative that preschool educators be equipped with the knowledge and skills to provide such a language environment for the children in their care.

Previous literature indicates that educators’ use of strategies conducive to facilitating conversations and optimizing child language learning (e.g., use of open questions, responsiveness, and elaborating on word meaning) is highly variable across educators (Dickinson & Tabors, 2001; Turnbull, Anthony, Justice, & Bowles, 2009). Some studies report that some
educators offer a modest or poor language environment with few opportunities for adult-child conversation (Dickinson & Tabor, 2001; Massey, 2004; Turnbull et al., 2009). Considering the specificity of the NICHD’s results, further research is needed that examines the effects of professional development on educators’ use of strategies to engage children in conversations and the impact of this on the children’s responsiveness and productivity (Dickinson, Darrow, & Tinubu, 2008).

One important classroom context for conversation is shared book reading. During shared reading, educators typically ask questions about the story and respond to children’s contributions. In doing so, educators engage children in book-related conversations and have opportunities to provide verbal models of more complex expressive language (Crain-Thoreson & Dale, 1999; Doyle & Bramwell, 2006; Hargrave & Sénéchal, 2000; van Kleeck, 2008; Wasik & Bond, 2001). The current study investigated the efficacy of a professional development program, ABC and Beyond™: Building Emergent Literacy in Early Childhood Settings (Weitzman & Greenberg, 2010), for improving educators’ ability to facilitate conversations during shared book reading with small groups of preschool children from low socio-economic backgrounds.

1.2 Quality child care

With growing numbers of preschool children participating in non-parental, centre-based care (NLSCY, 2003), it is crucial that we understand what constitutes high quality child care given its importance for promoting higher cognitive and linguistic outcomes for children (Burchinal, Roberts, Nabors, & Bryant, 1996; Burchinal, Roberts, Riggins, Zeisel, Neebe, & Bryant, 2000; NICHD, 2002). Importantly, both structural and process measures impact on the quality of center-based child care.

1.2.1 Structural measures of quality

Structural measures are those factors that are considered to affect the child indirectly, such as, educator-child ratios, numbers of children in the class, educators’ qualifications, and access to ongoing professional development (Burchinal, Roberts, Nabors, & Bryant, 1996).
1.2.2 Process measures of quality

Process measures are those factors that are considered to more directly influence the child, such as caregiver warmth, linguistic responsiveness (e.g., expansions of children’s utterances), and the provision of developmentally appropriate curricular activities (Burchinal, Roberts, Nabors, & Bryant, 1996). Both structural and process factors of quality are important for positive outcomes for children (Burchinal, Roberts, Riggins, Zeisel, Neebe, & Bryant, 2000; NICHD, 2002). The NICHD Early Child Care Research Network’s (2002) longitudinal study found that structural measures of quality such as educators’ access to professional development was positively correlated with higher levels of process measures of quality. However, this study and others suggest that process measures, such as the extent to which educators asked questions and were linguistically responsive in classroom conversations, were most strongly and positively correlated with children’s cognitive, linguistic, and social-emotional outcomes (Howes, Phillips, & Whitebook, 1992; Mashburn et al., 2008; NICHD, 2002). Consequently, the current study sought to examine whether an evidence-based professional development program (i.e., a structural factor) could improve the quality of educator-child interactions during shared reading (i.e., a process factor).

1.3 The language environment and literacy achievement

Conversations between adults and children during the preschool years play a vital role in language and literacy development and literacy outcomes (Chall, 1990; Connor, Morrison, & Slominski, 2006; Dickinson & Tabors, 2002; Hart & Risley, 1995; Justice, Meier, & Walpole, 2005; Wasik, Bond, & Hindman, 2006). Children who arrive at formal schooling with poor language skills are at-risk for poor early literacy outcomes (Gough & Tunmer, 1986; Scarborough, 2001; Stanovich, 1986) and later reading difficulties (Lonigan, Schatschneider, & Westberg, 2008; Sénéchal & Hargrave, 2000; Spira & Fischel, 2005; Stanovich, 1986). Longitudinal studies have shown that variations in the language environment during the preschool years have far reaching effects and are predictive of children’s language and conventional reading outcomes in the higher grades (Dickinson & Tabors, 2002; Hart & Risley, 1995). For example, Hart and Risley (1995) found that by 3 years of age, preschool children’s vocabulary scores were significantly correlated with both the amount of parent talk in the home and the length of the parents’ utterances. Children who heard greater amounts of language input
that contained more diverse vocabulary had more advanced language ability. Importantly, children from low income families heard significantly less talk, less varied vocabulary, and had significantly poorer language ability by 3 years of age as compared to children from middle and upper income homes.

A follow-up study seven years later revealed a significant positive relationship between the children’s language ability at preschool and their receptive vocabulary, language development, and reading comprehension at grade four (Hart & Risley, 2003). Thus, many preschool children from low income homes may not have the language abilities necessary to form a sound basis for literacy success (Hart & Risley, 1995). High quality preschool programs that provide a responsive language environment may offer a compensatory boost to the language learning of these children before they arrive at formal schooling. This boost may enhance children’s oral language skills, such as vocabulary, and better position them to profit from emergent literacy interactions (Dickinson & Tabors, 2002).

1.3.1 Emergent literacy

Children’s early language experiences play a critical role in emergent and conventional literacy success (Chall, 1990; Connor, Morrison, & Slominski, 2006; Dickinson, Golinkoff, & Hirsh-Pasek, 2010; Dickinson & Tabors, 2002; Hart & Risley, 1995; Howes et al., 2008; Justice, Meier, & Walpole, 2005; Lonigan & Whitehurst, 1998; Wasik, Bond, & Hindman, 2006; Whitehurst & Lonigan, 2001). Emergent literacy, a term first coined by Marie Clay in 1966, refers to the wide range of skills, behaviours, and attitudes that begin early in a child’s life, progress along a developmental continuum, and serve as the precursors to conventional reading and writing (Lonigan, 2006; Snow, Burns, & Griffin, 1998; Scarborough, 2001; Teale & Sulzby, 1986; van Kleeck, 1998; Whitehurst & Lonigan, 1998). Whitehurst and Lonigan (1998) proposed a model of emergent literacy that identified the inside-out and outside-in skills of learning to read, both considered key to later reading success. Inside-out skills refers to those skills necessary for a reader to decode the units of print into sound and recode these units of sound into language. These include letter knowledge (Foulin, 2005), letter-sound knowledge and phonological awareness (Lonigan, 2006; Schuele & Boudreau, 2008). Outside-in skills refer to the reader’s ability to make meaning out of print (i.e., oral language skills such as, vocabulary and narrative knowledge). Without adequate outside-in skills to decipher the meaning of the
words and sentences, children may be able to decode print without accessing comprehension of what they are reading. However, without sufficient decoding and word recognition ability, the meaning represented in the letter and word shapes on the page remains inaccessible to the reader. This study investigates educators’ ability to facilitate outside-in skills by providing a professional development program that instructs educators in how to engage children in conversations during shared book reading, a naturally-occurring classroom activity.

1.4 Facilitating conversation in preschool

Preschool educators are well-positioned to facilitate children’s engagement in conversation by asking questions and being responsive to their talk (Massey, 2004). A conversation is a verbal exchange between two or more individuals consisting of at least two turns (i.e., one per speaker) related to a single topic (Massey, 2004). The importance of preschool educators’ ability to engage young children in conversation is underscored by Vygotsky’s socio-cultural theory of child development.

1.4.1 Sociocultural theory

According to this theory, language is the key social tool through which learning takes place as participants co-construct meaning through conversation (Hetherington, Parke, & Schmuckler, 2005). Conversations with educators who have more advanced knowledge, whether on a particular subject matter or the structure of the language used or both, allow children to acquire knowledge gradually through the interaction. Initially, the more knowledgeable person holds a larger degree of the responsibility for the learning, operating within what Vygotsky termed the child’s zone of proximal development. The zone of proximal development is the level just beyond the child’s current knowledge or ability. It is the active participation in a conversation that enables children to construct meaning, contributing significantly to their own cognitive and linguistic development (Rogoff, 1990). The term scaffolding refers to the instructional strategy used by educators to support children’s learning by initially expecting them to participate or respond at lower levels of knowledge, skill, or confidence and gradually increasing the expectations of the children’s participation (Pentimonti & Justice, 2010; Wood, Bruner, & Ross, 1976). Therefore, according to this theoretical perspective, preschool educators who scaffold children’s language use and participation in conversation within their zone of proximal development may promote or even accelerate children’s developmental progress.
1.4.2 Scaffolding children’s language learning through conversation

Skilled educators can scaffold children’s language learning by asking questions in a way that elicits an answer within the children’s zone of proximal development. At lower levels of language ability, educators may ask children closed questions that are literal in nature, such as, a request to label a familiar item (e.g., Educator: “What is this?” Child: “A bird.”) (Blewitt, Rump, Shealy, & Cook, 2009). This facilitates children’s engagement in book-related talk at a low level of demand that is likely to elicit a correct response. This provides an opportunity for the educator to provide positive feedback. One possible response might be for the educator to acknowledge the child’s contribution and expand on it by adding syntactic and semantic content (e.g., Educator: “Yes, that is a bird. It’s called a robin.”). This participation in turn-taking related to the book enables the educator to stimulate additional book-related talk at higher levels of linguistic and cognitive demand. The educator can scaffold a higher level of response by following up with an open question (e.g., Educator: “What do robins like to eat?”). In expanding on the child’s utterance and scaffolding with an open question, the educator can facilitate the development of the child’s vocabulary and oral language.

When educators regularly engage young children in conversation they provide them with opportunities to process language more deeply, in terms of the linguistic turns of others, as well as their own formulations (Swain, 2000; Zimmerman et al., 2008). The current study is interested in two strategies educators use to engage children in conversation, questioning and contingently responding to children’s utterances.

1.4.2.1 Questions

When educators ask questions, they invite the children to take a conversational turn, thus facilitating the children’s engagement in dialogue (de Rivera, Girolametto, Greenberg, & Weitzman, 2005). While all questions may be beneficial for engaging children, open questions generally elicit more complex responses than closed questions. Closed questions, such as invitations to label (e.g., “What is this?”), may elicit constrained one- or two-word answers (de Rivera et al., 2005). In comparison, open questions (e.g., “What do you think will happen next?”) are less constrained by the asker, typically generate more multi-word responses (de Rivera, et al., 2005; Wasik & Bond, 2001; Wasik et al., 2006), and may provide opportunities for more linguistically and cognitively challenging talk (Massey, Pence, Justice, & Bowles, 2008).
1.4.2.2 Responsiveness

Educators are responsive when they acknowledge and reply to children’s utterances related to the topic of the moment. Studies have shown that educators’ responsiveness to children’s utterances is correlated with the quality of the classroom language environment (Connor, Son, Hindman, & Morrison, 2005; Wasik & Bond, 2006) and enhanced child language outcomes (Dickinson & Tabors, 2001; Girolametto & Weitzman, 2002; Snow, Burns, & Griffin, 1998). Responsive comments, such as, semantically contingent comments, expansions, imitations, and acknowledgements, are statements that enable the educators to direct the discussion and facilitate joint attention to a single topic (Girolametto & Weitzman, 2002; Turnbull, Anthony, Justice, & Bowles, 2009). When the educators’ comments are contingent on the children’s utterances, they validate the children’s contributions and potentially provide important feedback to them. Furthermore, educators have the opportunity to expand or elaborate on the children’s ideas by adding linguistic and cognitive content (Nelson, Camarata, Welsh, Butkovsky, & Camarata, 1996). In doing so, the educators model language use within the children’s zone of proximal development, or just above the children’s current knowledge or ability. Furthermore, when educators incorporate the children’s ideas into the conversation by commenting on them, they allow the children to affect the direction of the discussion and potentially enhance their engagement in the conversation (Culatta, Blank, & Black, 2010).

1.4.2.3 Longer conversations

This enhanced participation by the children may increase the likelihood of them taking successive turns related to the on-going topic of conversation, resulting in longer conversations (Crain-Thoreson & Dale, 1999; Girolametto & Weitzman, 2002; van Kleeck, 2008). These longer conversations explore a topic in greater depth and have been shown to be positively correlated with children’s language outcomes (Zimmerman, Gilkerson, Richards, Christakis, Xu, Gray, & Yapanal, 2009). Moreover, within longer conversations, educators have more opportunities to repair or expand on children’s utterances by adding additional semantic and syntactic content that is within the children’s zone of proximal development.

1.4.3 Variability in preschool language environments

Recent research reveals that there are vast differences in children’s language environment across preschool programs, specifically in the amount of responsive language directed to children.
(Connor, Morrison, & Slominski, 2006; Dickinson & Tabors, 2001) and the opportunities for children to talk (Massey, 2004; Wasik, Bond & Hindman, 2006). Moreover, there is wide variation in the ability of preschool educators to use strategies conducive to language learning, such as asking questions, responding contingently to children’s talk (Girolametto & Weitzman, 2002; Girolametto, Weitzman, & Greenberg, 2006), and promoting word learning (Justice, Meier, & Walpole, 2005). Turnbull, Anthony, Justice, and Bowles (2009) reported that across a variety of classroom contexts, only one third of educators’ utterances were language-facilitating utterances. For example, they reported that educators asked fewer than one open question per minute in these classrooms serving at risk children (0.7 per minute), a finding consistent with previous studies (Crain-Thoreson & Dale, 1999). Given the diverse language learning needs of children in a preschool classroom, educators need to be skilful in their ability to use strategies to promote conversation and language learning, particularly for children considered at-risk. A naturalistic classroom context that provides a structured opportunity for educators to promote conversation in preschools occurs during book reading (Dickinson & Keebler, 1989; Kaderavek & Justice, 2009; Massey, 2004). The current study examines the efficacy of professional development to enhance educators’ classroom practice in facilitating book-related conversations during shared book reading.

1.5 Shared book reading

Shared book reading is an interactive method of reading books aloud to children by encouraging their active participation in book-related conversation using such strategies as asking questions and contingently responding to their utterances (Blewitt, Rump, Shealy, & Cook, 2008; Crain-Thoreson & Dale, 1999; Doyle & Bramwell, 2006; Hargrave & Sénéchal, 2000; van Kleeck, 2008; Wasik & Bond, 2001).

1.5.1 Effects on child language

Several studies have shown that children’s active involvement in shared book reading is positively associated with a number of areas of child language development, including vocabulary (Gerde & Powell, 2009; Justice, Meier, & Walpole, 2005; Hargrave & Sénéchal, 2000; Lonigan & Whitehurst, 1998; Roberts, Jurgens, & Burchinal, 2005; Wasik & Bond, 2001), expressive language (Crain-Thoreson & Dale, 1999), oral narrative skills (Lever & Sénéchal, 2011; Zevenbergen, Whitehurst, & Zevenbergen, 2003), and story comprehension (Dickinson &
Smith, 1994). The National Early Literacy Panel’s meta-analysis found that shared book reading was an effective strategy for use with preschool children yielding moderate effects for oral language skills (NELP, 2008). The “active ingredient” in shared book reading that is considered to be key to achieving these enhanced child language outcomes is the enriched book-related conversations that occur between the adult and child. Therefore it is important to understand the “fine-grained aspects” of educator-child exchanges during shared book reading (Darrow, Dickinson, & Tinubu, 2008) because conversation is the mechanism through which learning is considered to occur (Rogoff, 1990; Bodrova & Leong, 2006).

1.5.2 Book-related conversations

The existing literature indicates that preschool educators’ use of questions and contingent responses during book reading is positively correlated with preschool children’s language productivity (Girolametto, Weitzman, van Lieshout, & Duff, 2000; Wasik, Bond, & Hindman, 2006). For example, Wasik et al. (2006) reported that when educators engaged children in book-related conversations, the children produced a greater number of book-related utterances in conversation using a greater number of different words and syntactically complex sentences. Further, when children are responsive and engaged in conversational turn-taking during shared reading, the ensuing dialogue is more likely to include multiple turns related to a single topic (Dickinson, 2003). These longer extra-textual conversations are likely to be cognitively challenging, in that, they cover each topic in greater depth (Dickinson & Smith, 1994; Massey, 2004). Shared book reading conversations provide educators with opportunities to model more complex expressive language (Crain-Thoreson & Dale, 1999; Doyle & Bramwell, 2006; Hargrave & Sénéchal, 2000; van Kleeck, 2008; Wasik & Bond, 2001).

1.5.3 Vocabulary learning

Further, book-related conversations also provide an important classroom context for educators to promote vocabulary learning with preschool children (deTemple & Snow, 2003; Dickinson, McCabe, & Anastasopoulos, 2003). Word knowledge is key to supporting definitional vocabulary, grammatical knowledge, and listening comprehension (Lonigan, Schatschneider, & Westberg, 2008). Children’s vocabulary level at the beginning of grade one is predictive of reading ability at the end of grade one and at grade three (Hart & Risley, 2003; Sénéchal, LeFevre, Thomas, & Daley, 1998). Therefore it is important that preschool educators are
knowledgeable about strategies to promote word learning, particularly for those children considered at-risk.

Shared book reading provides opportunities for both explicit and implicit experience with new words and both have been found to be beneficial for vocabulary learning. Implicit or incidental exposure has been found to result in preschool children’s word learning following one or two readings of a book (Sénéchal & Cornell, 1993), or after repeated readings of the same book (Hargrave & Sénéchal, 2000; Justice 2002; Robbins & Ehri, 1994). Explicit strategies to elaborate on word meanings, such as providing a synonym or definition, have been found to have moderate effects on children’s word learning (Biemiller & Boote, 2006; Justice, Meier, & Walpole, 2005). Conversations that elaborate on word meanings can occur naturally during the book reading experience providing important opportunities for the children to gain a deeper understanding of words (Coyne, Simmons, Kame’enui, & Stoolmiller, 2004; van Kleeck, 2008). For example, when an educator reads a book about trains to preschool children, he or she might stop and elaborate on the meaning of the words ‘freight train’ by asking children if they know what it is, clarifying or expanding on their definitions, and asking about their personal experiences in seeing one and what types of cargo they think a freight train might carry.

Children’s implicit and explicit experiences with words can support word learning. Biemiller and Boote (2006) reported that preschool children were able to provide an accurate definition for 8% of a list of target words that were not elaborated on during a single book reading (i.e., implicit exposure) and 23% of the words that were elaborated (i.e., explicit exposure). Although both strategies are beneficial for word learning, studies have reported that children with lower vocabulary levels made the greatest gains as a result of explicit word elaboration interventions (Coyne, Simmons, Kame’enui, & Stoolmiller, 2004; Hargrave & Sénéchal, 2000; Justice, Meier, & Walpole, 2005; Wasik & Bond, 2001). Therefore educators’ use of explicit strategies to promote word learning may be necessary to help to close the gap for children with impoverished vocabulary who are at risk for poor language and literacy outcomes (Stanovich, 1986).

1.6 Preschool educators’ use of shared book reading

Shared book reading studies reveal that preschool educators may require additional support to facilitate conversations during book reading (Dickinson, McCabe, & Anastasopoulos, 2002; Girolametto, Weitzman, van Lieshout, & Duff, 2000; Massey, Pence, Justice, & Bowles, 2008).
Some studies have reported that educators rarely asked children questions that facilitated extended book-related conversation (Dickinson & Tabors, 2001; Girolametto, Weitzman, & Greenberg, 2006; Massey, Pence, Justice, & Bowles, 2008; Zucker, Justice, Piasta, & Kaderavek, 2010). Instead, these studies indicated that the educators asked more closed questions that typically generated one- or two-word responses from children. Moreover, there is wide variability in educators’ use of book-related questions when reading to preschool children. Gerde and Powell (2009) reported that among 60 Head Start educators, some asked no questions within a single book reading while others asked as many as 62 questions ($M = 14$, $SD = 8.2$, range = 0-62). Consequently, children in different classrooms have very different book reading experiences depending on the educator’s ability to engage them in conversation. Furthermore, several studies reported that some educators used a style of reading books that was instructional in nature (Hindman et al., 2008) using talk that was intended to elicit specific responses (Dickinson et al, 2002), manage children’s behaviour (Wasik, Bond, & Hindman, 2006), or control the topic by dominating the turn-taking (Girolametto, Weitzman, van Lieshout, & Duff, 2000). Moreover, some studies have reported that the majority of educators’ extra-textual talk during book reading is of low cognitive demand requiring minimal responses or input from the children (Girolametto, et al., 2007; Dickinson, McCabe, & Anastasopoulos, 2002). Further, educators need to be familiar with conversational strategies to promote vocabulary instruction during book reading, particularly for those children at-risk (Biemiller & Slonim, 2001). In order to enhance the language learning opportunities for children in preschool classrooms, it is important that we understand whether professional development can enhance educators’ ability to facilitate conversation and word learning during shared reading (Dickinson & McCabe, 2001).

### 1.6.1 Professional development studies

Professional development for preschool educators that focuses on instruction in shared book reading is intended to enhance educators’ classroom practice and this, in turn, is expected to result in enhanced child language and literacy outcomes. Although a number of studies have investigated the effects of shared book reading intervention on preschool children’s language outcomes (Coyne, Simmons, Kame’enui, & Stoolmiller, 2004; Hargrave & Sénéchal, 2000; Justice, McGinty, Piasta, Kaderavek, & Fan, 2010; Lonigan & Whitehurst, 1998; Newman & Cunningham, 2009), more work is needed that examines changes in educators’ practices as a result of participation in professional development.
A number of studies have examined the effectiveness of shared book reading interventions in preschool classrooms that were delivered by the researcher or by research assistants (Justice, Meier, & Walpole, 2005; Lever & Sénéchal, 2011; van Kleeck, Vander Woude, & Hammett, 2006). As visitors to the classroom, researchers are able to focus their attention solely on delivering the intervention while preschool educators typically juggle multiple tasks simultaneously (e.g., ensuring child safety, observing behaviour, maintaining standards of custodial care, preparing for curriculum delivery, and completing administrative tasks). As such, the results of these studies may not be generalizable to educators in preschool classrooms.

Further studies have investigated the effects of shared book reading interventions that were delivered by preschool educators in their classrooms, however, the outcomes reported were child language outcomes using standardized measures (Blewitt, Rump, Shealy, & Cook, 2009; Justice, Meier, & Walpole, 2005; Lever & Sénéchal, 2011; van Kleeck, Vander Woude, & Hammett, 2006). Although this is an important outcome of shared book reading, more work is needed that examines the effects of professional development for shared book reading on educators’ practice, such as, do educators ask more open questions following professional development? There are only a few studies that report on educators’ utterances that create opportunities for child engagement in book-related conversations (i.e., questions, responsive comments) and utterances that promote elaboration of word meaning. Importantly, little is known about the effects of these changes in educators’ practice on children’s responsiveness and productivity and the extent to which these changes contribute to the length of book-related conversations. Moreover, it is important that experimental studies be used in order to link changes in educators’ practice following professional development to the training.

1.6.2 Experimental studies

Only a few experimental studies have reported on the effects of professional development on educators’ use of strategies to engage children in book-related dialogue and promotion of word learning strategies (Girolametto, Weitzman, Lefebvre, & Greenberg, 2007; Wasik, Bond, & Hindman, 2006). Using an experimental design, Girolametto and his colleagues reported on the effects of a 2-day professional development program that instructed educators in multiple strategies to engage preschool children in book-related talk during shared book reading (Girolametto, et al., 2007). Educators in the experimental group made significant gains in their
use of utterances that were decontextualized. Further, these changes in the educators’ talk elicited more inferential talk from the children (i.e., talk about emotions and past experiences) during storybook reading as compared to a control group. This study showed that educators can make measureable changes in their use of utterances during book reading following professional development and that these changes can result in changes to the children’s responses in book-related talk. In another experimental study, Wasik, Bond, and Hindman (2006) trained 10 Head Start educators to promote book-related conversation, to ask open questions, to promote vocabulary learning (i.e., by introducing and talking about novel or key words during book reading), and connect the words and events in the story with the children’s experiences. This professional development program was delivered over nine months and it included a monthly instructional workshop and individualized coaching. The results revealed that compared to the control group, the experimental group asked significantly more open questions during book reading and talked significantly more overall, an outcome that was positively correlated with the children’s receptive language scores. However, although the correlational analyses revealed that educators’ book reading behaviours at posttest had modest associations with receptive and expressive vocabulary scores, Wasik and her colleagues did not report on the frequency of educators’ use of strategies to promote vocabulary learning. These enhanced vocabulary scores at posttest may be related to other features of educators’ reading behaviour, such as the increased use of open questions. Taken together, the results of both Girolametto et al., (2007) and Wasik et al., (2006) indicate that the educators were able to make significant behavioural changes in the way they talked to the children during shared book reading following professional development. However additional work is needed to identify the effect of professional development on educators’ use of strategies to engage children in book-related talk, child responsiveness, and the combined effects of these on the number of educator-child conversational turns related to a single topic. Additionally, further research is needed to explore the effects of professional development on educators’ use of explicit strategies in conversation to promote word learning during shared book reading.

1.7 Research objectives and hypotheses

This study examined the efficacy of a professional development program that instructed educators to use shared book reading to facilitate book-related conversations with preschool children. The objectives of the study were as follows:
1. To determine whether professional development would result in an increase in educators’ rate of questions and responsive statements during shared book reading.

It was predicted that following the program, educators would ask more open-ended questions and use more responsive statements. This hypothesis was based on the results of previous research (Wasik, Bond, & Hindman, 2006) demonstrating that instruction plus classroom coaching can result in increased educator talk, including more open questions during shared reading.

2. To determine if educators in the experimental group differed in their use of strategies to promote word learning.

First, it was predicted that educators would use a greater number of different words in their extra-textual conversation. This hypothesis was based on previous work demonstrating that educators who received instruction to ask questions and respond to children, used more different words following intervention (Wasik & Bond, 2001). Additionally, it was predicted that educators who received professional development would use significantly more explicit strategies to promote word learning based on the results of Wasik et al. (2006).

3. To identify whether educators’ participation in professional development resulted in differences in the rate of utterances, number of different words spoken, and rate of responsive statements used by the children in the experimental group as compared to the control group.

It was predicted that children in the experimental group would be more responsive, talk more, and use more different words relative to the control group. This hypothesis was based on prior work indicating that when educators asked more open questions and were more responsive, children were more responsive and produced more language (de Rivera, et al., 2005; van Kleeck, 2008).

4. To identify whether educators and children would have more and longer book-related conversations during shared storybook reading following professional development.

It was predicted that educators who were trained to increase their use of questions and responsive statements with the goal of engaging children in conversations would generate longer conversations. This hypothesis is based on the inclusion of such strategies in the intervention as
“strive for five” (Dickinson, 2003) that encouraged educators to aim to have conversations that are five turns in length or longer. This type of strategy that aims for longer conversation is important for engaging children in and maintaining conversation for more successive turns (Crain-Thoreson & Dale, 1999; Girolametto & Weitzman, 2002; van Kleeck, 2008).
Chapter 2

2 Methods

2.1 General design

This experimental study used a pretest posttest design with 20 preschool educators randomly assigned to a treatment group (N=10) and a no treatment control group (N=10). Each educator was videotaped reading two narrative storybooks with a small group of three to four preschool children from her classroom at two time points (i.e., pretest and posttest). Pretest and posttest data were collected 8 weeks apart during the Fall. The educators in the experimental group participated in a professional development program promoting emergent literacy. This intervention consisted of four workshops (three and one half days) and three individual coaching visits in the educators’ classrooms between each workshop. The control group did not receive any intervention during this time but remained on a waitlist for the program. All control group participants received the professional development program following the posttest data collection at Time 2.

2.2 Participants

2.2.1 Preschool educators

The participants in this study were 20 preschool educators who worked in 18 licensed child care centres in the metropolitan area of Toronto. All of the participants were female, had completed high school and postsecondary education, receiving either a diploma or degree in Early Childhood Education. All of the educators had a minimum of two years of experience working in child care settings and as the lead teacher in their classroom were responsible for curriculum planning. All of the educators’ preschool classrooms were for 4 and 5 year olds and had an adult-child ratio of 1:8 as mandated by law in the Province of Ontario. The neighbourhoods where the child care centres were located had median income levels ranging from $14,512.00 - $47,935.00 (Stats Can, 2006).

All 20 educators were randomly assigned to the experimental and control groups using assigned numbers and a random numbers table. All educators completed a brief demographic
questionnaire (e.g., age, years of study, experience). Descriptive data on the pretest characteristics of the early childhood educators can be found in Table 1 below.

Table 1

Pretest Characteristics of the Preschool Educators

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 10)</td>
<td>(n = 10)</td>
</tr>
<tr>
<td>Age (in years):</td>
<td>M (SD)</td>
<td>39.7 (10.3)</td>
</tr>
<tr>
<td></td>
<td>Min-Max</td>
<td>23-58</td>
</tr>
<tr>
<td>Years of Education:</td>
<td>M (SD)</td>
<td>3.0 (1.3)</td>
</tr>
<tr>
<td></td>
<td>Min-Max</td>
<td>2-5</td>
</tr>
<tr>
<td>Years of Experience:</td>
<td>M (SD)</td>
<td>14.1 (6.0)</td>
</tr>
<tr>
<td></td>
<td>Min-Max</td>
<td>2-25</td>
</tr>
<tr>
<td>Class Size (# children)</td>
<td>M (SD)</td>
<td>15.0 (6.0)</td>
</tr>
<tr>
<td></td>
<td>Min-Max</td>
<td>8-24</td>
</tr>
</tbody>
</table>

1 All classrooms maintained an adult-child ratio of one educator for 8 children.

At pretest, there were no significant differences between the experimental and control groups in the educators’ age, number of years of education, number of years of experience, or number of children in their classrooms, ts(17-18) = -1.47 – 0.06, ps = 0.16 – 0.95. Four educators, two in each group, had learned English as a second language and spoke a different language at home. However, all educators had completed their academic qualifications in early childhood education in English and spoke English fluently. All of the educators reported that they had not participated in any previous professional development training on how to facilitate emergent literacy skills.

The educators also completed the Educator Early Literacy Questionnaire (adapted from Boudreau, 2008) on their own classroom book reading practices. This questionnaire asked the
educators to rate how often they read to children in small groups and how many books they typically read in one sitting. See Table 2 below for a summary of the questionnaire results.

Table 2

*Summary Statistics for Ratings on the Early Literacy Educator Questionnaire*

<table>
<thead>
<tr>
<th>Questionnaire Item</th>
<th>Experimental Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean/Median</td>
<td>Mean/Median</td>
</tr>
<tr>
<td></td>
<td>Min-Max</td>
<td>Min-Max</td>
</tr>
<tr>
<td>1. How often do you read to large groups of children?</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>4.0 – 5.0</td>
<td>3.0 – 5.0</td>
</tr>
<tr>
<td></td>
<td>2.0</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td>0.5 – 5.0</td>
<td>0.5 – 5.0</td>
</tr>
<tr>
<td>(a) On average, how many hours per week?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) How many books do you typically read in one sitting?</td>
<td>1.8</td>
<td>1.9</td>
</tr>
<tr>
<td></td>
<td>1.0 – 2.5</td>
<td>1.0 – 2.5</td>
</tr>
<tr>
<td>2. How often do you read to small groups (i.e., fewer than 5)?</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>3.0 – 5.0</td>
<td>2.0 – 5.0</td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>0.4 – 4.0</td>
<td>0.4 – 7.5</td>
</tr>
<tr>
<td>(a) On average, how many hours per week?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) How many books do you typically read in one sitting?</td>
<td>1.7</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>1.0 – 2.5</td>
<td>1.0 – 3.5</td>
</tr>
<tr>
<td>3. How often do you ask the children questions as you read the story?</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>3.0 – 5.0</td>
<td>3.0 – 5.0</td>
</tr>
<tr>
<td></td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>2.0 – 4.0</td>
<td>2.0 – 4.0</td>
</tr>
<tr>
<td>(a) Do you ask children to summarize facts in the story?</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>1.0 – 5.0</td>
<td>2.0 – 5.0</td>
</tr>
<tr>
<td>(b) Do you ask children to relate their own experience to the story?</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>1.0 – 5.0</td>
<td>2.0 – 5.0</td>
</tr>
<tr>
<td>(c) Do you ask children to predict what will happen next?</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>2.0 – 5.0</td>
<td>3.0 – 5.0</td>
</tr>
<tr>
<td>4. Do you attempt to teach the alphabet letter names when reading books?</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>1.0 – 5.0</td>
<td>2.0 – 5.0</td>
</tr>
</tbody>
</table>
Across all 20 educators, the median rating of how often the educators read to small groups of
children was 4.0 (i.e., daily) and the mean number of books read in one sitting was 1.9 books
(ranging from 1.0 to 3.5 books). Four educators, two in each group, assigned ratings of 3.0 or
less for small group reading (i.e., once a week). These responses substantiated the educators’
regular experience in reading to small groups of preschool children and the number of books
they were asked to read in one sitting in the current study (i.e., two).

2.2.2. Children

A total of 76 preschool children participated in this study. The three to four children in each
small group were recruited from each participating educator’s classroom. Children were eligible
to participate if they were from low income homes, as assessed by child care subsidy
information. Supervisors, who had access to subsidy data, nominated all children in the
educator’s classroom who were receiving subsidy. Consent and information forms were given to
all eligible families. The participating children were randomly selected from those who returned
signed consent forms, with balancing for equal number of boys and girls. In some of the
participating preschool centres, information on subsidy was unavailable. In these cases, consent
forms were sent home to all families and children whose families returned signed consents were
selected at random. The group size was set at four children because previous research indicated
that adult language input was adversely affected by larger group sizes (Pellegrino & Scopesi,
1990) and that young children were more interactive in small rather than large group settings
(McCabe et al., 1996; Wasik, 2008).
Once consent to participate in the study was obtained from the families, parents were asked to complete a child and family demographic information questionnaire. Additionally, all educators completed a short questionnaire of four items from the Speech and Language Assessment Scale (SLAS; Hadley & Rice, 1993) to provide baseline information on each child’s language development. Summary data describing the characteristics of the children can be found in Table 3. The average age of the children was approximately 55 months (ranging from 44 – 69 months). Approximately 75% of the children in both groups were receiving subsidy, indicating that they came from low income homes. All were enrolled in half-day Junior Kindergarten or Senior Kindergarten programs at the time of the study and spent the remainder of the day in child care. Junior Kindergarten programs are intended for 4-year old children and Senior Kindergarten programs are intended for 5-year olds; both are offered by public schools in Ontario. Consistent with a large urban setting, 44% of the children in the experimental group and 51% of the children in the control group spoke another language in the home (e.g., Amharic, Cantonese, Dari, Farsi, French, Japanese, Mandarin, Polish, Portuguese, Romanian, Spanish, Tagalog, Tibetan, Tigrina, Twi, Yoruba). There were no significant differences between the two groups of children in terms of their age in months, \( t(74) = -1.10, p = 0.274 \), length of time they had been in child care, \( t(71) = 0.76, p = 0.448 \), the proportion of children who spoke another language in the home, \( \chi(1) = 0.46, p = 0.646 \), the proportion of children who were on subsidy, \( \chi(1) = 2.943, p = 0.086 \), or the proportion of children in Junior versus Senior Kindergarten programs, \( \chi(1) = 0.158, p = 0.691 \). Also there were no significant differences between the two groups in terms of their language ability as determined by the educators’ ratings that examined receptive and expressive language skills on the Speech and Language Assessment Scale (SLA; Hadley & Rice, 1993), \( t (74) = -0.27, p = 0.788 \). The data in Table 3 indicate that the children’s language skills were, on average, within normal limits (i.e., a rating of 3 = normal for age). Further, an independent samples t-test indicated that there were no significant differences in the educators’ rating of the boys’ and girls’ scores on the SLA scale (i.e., experimental group, \( t (37) = -0.752, p = .457 \), and control group, \( t (35) = -1.622, p = .114 \)).
Table 3

*Pretest Characteristics of the Children in the Experimental and Control Groups*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Experimental Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>(n = 39)</em></td>
<td><em>(n = 37)</em></td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>25</td>
</tr>
<tr>
<td>Age (months)</td>
<td>M (SD)</td>
<td>54.2 (6.8)</td>
</tr>
<tr>
<td></td>
<td>Min-Max</td>
<td>44-68</td>
</tr>
<tr>
<td>SLAS Score(^1)</td>
<td>M (SD)</td>
<td>3.8 (0.7)</td>
</tr>
<tr>
<td></td>
<td>Min-Max</td>
<td>2.4-4.9</td>
</tr>
<tr>
<td>Time in Child Care(^2)</td>
<td>M (SD)</td>
<td>27.3 (14.5)</td>
</tr>
<tr>
<td></td>
<td>Min-Max</td>
<td>1-57</td>
</tr>
<tr>
<td>Exposure to Another Language</td>
<td>Yes</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>22</td>
</tr>
<tr>
<td>Subsidy</td>
<td>Yes</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>9</td>
</tr>
<tr>
<td>Schooling(^3)</td>
<td>JK and child care</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>SK and child care</td>
<td>11</td>
</tr>
</tbody>
</table>

\(^1\) Speech and Language Assessment Scale (a score of 3 = normal for age; 5 = above normal); \(^2\) Length of time in months that child has attended the child care centre; \(^3\) JK = Half day Junior Kindergarten; SK = Half day Senior Kindergarten
2.3 Procedure

2.3.1 Recruitment

Educators were recruited by means of a brochure with a fax-back application form that was circulated to all city-operated child care centres in Metropolitan Toronto. To enable the centres to participate, the program was offered at no cost to the educators and the centre received funds to hire substitute staff for maintaining staff-child ratios while the educators attended the professional development program. Where educators agreed to participate, a research assistant visited the child care centre to describe the research in more detail and obtain the educators’ written consent. Educators completed two brief questionnaires that requested demographic information (e.g., educators’ age, training, years of experience, literacy practices) and classroom literacy practices. They were given copies of consent forms and questionnaires (requesting demographic information) to distribute to the parents of the children. One to two weeks after this first visit, the research assistant returned to the centres to collect the parent consent forms and questionnaires. In some cases, only three families had signed consent forms and the group size included the three available children (i.e., four groups had three children each; one in the experimental and three in the control condition). Additionally, the educator completed a short questionnaire that rated each child’s language development.

2.3.2 Testing procedure

The same testing procedures were used at pretest and posttest. The research assistant videotaped the educator-child interaction during the small group book reading. Only the children participating in the study were videotaped; the other children from the classroom were in another room, in a different area of the same classroom, or participated in outdoor play. The video-recording of the conversation and behaviours of the educator and the children was completed using a portable camera with a directional microphone. The instructions given to the educators for the shared storybook reading session were: “The purpose of this videotape is to observe how children communicate during a typical storybook reading activity. Please read these two books to the children the way you usually read to them.” The groups were videotaped for approximately 15 minutes of storybook reading that took place on the floor of the designated book centre. The research assistant provided the educator with two unfamiliar story books, *Little Yellow Dog Gets a Shock* (Simon, 2003) and *Don’t Forget to Come Back* (Harris, 1978). These
two books were read at both time points, Time 1 and Time 2. Both books followed a narrative sequence (e.g., beginning, middle, end, with a problem and resolution). A previous feasibility study indicated that educators read the two books comfortably within this time period (Girolametto et al., 2007). Immediately following the videotaping, the early childhood educators rated the representativeness of their interactions using a 5-point scale (1 = very typical; 3 = typical; 5= not typical). These ratings were taken to obtain the educators’ perceptions of how typical the interactions were and to determine whether the videotapes were typical or not from the educators’ point of view. This is a procedure used previously in studies of educator-child interaction (Girolametto et al., 2007). At pretest, educators rated their amount of talk and rate of speech as typical (mean amount of talk = 3.0 and mean rate of speech = 3.2). In addition, the educators rated their comfort level during the book reading as typical of unobserved interaction (mean rating = 3.2). Similar ratings were obtained at posttest (mean amount of talk, 2.7; mean rate of speech, 3.1; and mean comfort level, 3.4). These ratings provide some assurance that the educators believed their interactions to be similar to other unobserved small group book reading sessions in the child care centre. These ratings are consistent with those obtained from educators in a previous feasibility study (Girolametto et al., 2007).

2.4 Professional Development Program

The professional development program utilized in this study was *ABC and Beyond: The Hanen Program® for Building Emergent Literacy in Early Childhood Settings* (Greenberg & Weitzman, 2010). This training included four workshops and three individual classroom visits and taught educators strategies to use across the day with all children in their classroom. All four workshops were taught by a speech-language pathologist who had extensive experience consulting to educators in early childhood settings. The first five-hour workshop included strategies for facilitating conversation during storybook reading. These strategies included: promoting conversation related to the book content, elaborating on word meaning, following the children’s lead, and engaging all the children in the group. The professional development program included instruction in strategies to carry on longer book-related conversations, one referred to as “Strive for five” (Dickinson, 2003; Weitzman & Greenberg, 2010). This strategy encouraged educators to maintain and deepen a topic of conversation for five or more conversational turns by different speakers within the group. One conversational turn was defined
as all consecutive utterances of the same speaker. Therefore if the educator expressed six consecutive utterances this would constitute one turn.

To promote word learning through conversation, educators were taught to isolate words that are important for the children’s comprehension of the story, to elaborate on the meaning of those words, and to relate those words to the events in the story or to the children’s personal experience. The specific strategies were: 1) select and stress words that are rare or important to comprehension of the story, 2) explain those words using a definition or synonym, 3) relate the words to the events in the story or the children’s real world experience, and 4) repeat those words in conversation during the book reading. The second five-hour workshop focused on use of decontextualized language or talk that went beyond the immediately available information. Strategies that were taught included how educators can use comments and questions that are literal, such as talk that focused on information available in the text or pictures of the book (e.g., “This is Little Yellow Dog.”; “What are the dog and cat doing?”) to more cognitively-challenging inferential talk (e.g., “What do you think the Little Yellow Dog will do next?”; “My cat and dog don’t like to share, just like the cat and dog in the book.”). The third five-hour workshop taught educators how to use print and sound references to build print concepts, alphabet knowledge, and sound awareness. Educators were taught to use both storybook reading and post-story writing activities as a context for modelling this information. The final three-hour workshop was a half day review. Between each workshop, educators received individual classroom visits by a speech language pathologist (for a total of three visits) that provided them with an opportunity to individualize the workshop content to their classrooms and receive feedback.

Classroom coaching visits were approximately one hour in duration and were conducted by one of two speech-language pathologists who were both directly involved in the development of the program and who attended every workshop. The 10 educators in the experimental group were randomly assigned to one of the two speech-language pathologists who both adhered to a consistent protocol for these visits. Each classroom visit included (a) videotaping educators interacting with a small group of children in the classroom, (b) coaching the educator, as needed, during the videotaping session, and (c) reviewing the videotape and discussing the use of strategies taught in the previous workshop. The videotapes were only used to assist learning during the professional development program and were not used for outcome measures. Prior to
videotaping, the speech-language pathologist reviewed the educator’s planned activity for the videotaped interaction and commented, if appropriate. For example, following the workshop on promoting conversation, the educator and speech-language pathologist might discuss how to use a selected children’s book to ask open questions to engage children in more cognitively challenging talk (e.g., “What do you think will happen next?”, “Can you think of a time when you felt like that?”, and “Why do you think he is saying that?”). During the videotaping, the speech-language pathologist paused the camera from time to time to offer suggestions for engaging the children in the conversation, and then resumed videotaping. For example, if an educator was observed to ask questions that focused primarily on the text, the speech-language pathologist might coach the educator to ask one or two specific prediction questions. Whether or not to make on-the-spot suggestions (or to wait to discuss the interaction while viewing the videotape) was based on an initial discussion with the educator about how she preferred to learn. Following the videotaping, a supply educator remained in the classroom to maintain teacher-child ratios (i.e., 1 to 8), while the speech-language pathologist and educator jointly reviewed the videotape in another room that was free of distractions. The purpose of the videotape review was to provide positive feedback on the use of program strategies, observe the impact of these strategies on the children (such as the effect of prediction questions on children’s engagement in the story), and solicit from the educator additional suggestions for implementing program strategies in the classroom. In this way, the classroom visit aimed to build the educator’s self-awareness and self-evaluation, while modelling reflective/intentional practice that was planned and purposeful. During the videotape review, the educator was encouraged to take the lead in commenting on the strategies used, their effects on the children, and any challenges encountered. Finally, the speech-language pathologist and educator discussed and problem-solved questions that arose regarding program content or strategy application and developed a new plan for the educator to practice in her classroom.

The teaching methods used in all four of the workshops were similar and included (a) a review of the previous week’s workshop content, (b) interactive lectures with examples and videotapes selected to illustrate key strategies, (c) small group discussions to analyze videotaped examples or discuss ideas for strategy implementation in the classroom, (d) role plays of strategy implementation, and (e) completion of action plans, in which educators wrote out the strategies they intended to use in the activity that would be videotaped during the following classroom
visit. The videotapes used to teach new strategies included educators and children who were not involved in the study. Selected segments of the participants’ videotapes were used (with their permission) at the beginning of the sessions to review and encourage discussion about strategies that were taught in the previous session.

2.4.1 Treatment Fidelity

The program leader kept attendance records of the educators’ participation in the four workshops and three classroom visits. All 10 educators in the experimental group participated in the three classroom visits and all visits adhered to the established protocol. Eight of the 10 educators attended all four workshops. However, two educators in the experimental group had an unavoidable scheduling conflict for one workshop session and the program leader provided these two educators with an individual session that covered the missed content.

The videotaped interactions that were filmed during the individual classroom coaching visits provided further information about treatment fidelity, that is, the educators’ use of program strategies. The coaches completed checklists for each of the three classroom visits. A frequency response rating scale of 0 – 2 was used to determine if the educator used a strategy consistently (score of 2), sometimes (score of 1), or not at all (score of 0). The ratings were converted to a percentage of the total possible points for the classroom visit. The mean fidelity scores for the three classroom visits were 91.9%, 94.3%, and 91.7%, with a range from 67% to 100%. Overall, this indicated a high degree of implementation overall. For educators who received less than 100%, the focus of the classroom coaching centered on those strategies that they did not use consistently (Kaderavek & Justice, 2010).

2.5 Outcome measures

The current study focused on three primary outcomes of the professional development program. First, this study investigated differences between the experimental and control groups on the structural features of the extra-textual talk of the educators and children. Specifically, this study examined the educators’ use of questions (i.e., open and closed questions) and responsive statements (i.e., comments, expansions, imitations, and acknowledgements) as well as, children’s responsive statements. Second, this study examined the educators’ and children’s use of different words and the educators’ use of strategies to promote word learning. Third, this study
examined the number and length of conversations that took place between the educators and children during the small group reading experience.

2.5.1 Transcription

The pretest and posttest videotapes of educator-child shared book reading were transcribed and coded by the primary author of this study who was blind to the group assignment of the participants and time of the recordings (i.e., pretest and posttest). All shared book reading interactions were transcribed using Transcript Builder (Moore, 2000) and Systematic Analysis of Language Transcripts (SALT, Miller & Chapman, 2002). All utterances spoken by the educator during book-reading were identified on the transcript with an ‘E’ for educator. Each child’s name was replaced with a letter A, B, C, or D in order of youngest to oldest child and each child’s utterances were identified with their corresponding letter. A trained research assistant who achieved 90% accuracy in transcription of three training recordings conducted agreement reliability on 100% of the transcriptions. Following a consensus procedure used by Johnston (2001), the research assistant viewed the videotapes while reading the completed transcripts, entering queries and corrections directly onto transcripts. The primary investigator and the research assistant then met to resolve all discrepancies. Where a discrepancy could not be resolved, an X was entered on the transcript. Agreement reliability was calculated using the following formula: number of agreements / (the number agreements + disagreements) x 100 (Sackett, 1978) and yielded 99.9% for utterance boundaries, 99.6% for words, and 99.5% for allocation of speakers. Overall agreement was 99.7%. Agreement reliability indicated the extent to which the verifier agreed with the original transcription prior to making any changes to the transcripts.

2.5.2 Coding system for utterances

The transcripts were coded using three different systems in order to answer our research questions. First, a mutually exclusive and exhaustive coding system was developed to assess all verbal utterances of the educator and each of the children during shared reading. An utterance was defined as all words spoken by an educator or a child that was not interrupted by a pause, terminal intonation contour, or another speaker’s utterance. Reading the book text was not included as an utterance. Codes were marked directly on the transcript while viewing the video recording. The 40 transcripts (20 pretest and 20 posttest) were coded in random order using a
pre-determined list developed by drawing numbers from a hat. For a description of the utterance
codes, see Appendix A. SALT was used for analysing the transcripts for linguistic features and
codes of interest.

The codes used for educators’ and children’s utterances included question types (two codes) and
responsive statements (four codes). The two question codes were open-ended and closed
questions. Open-ended questions were identified as questions to which the answer was not
constrained or predetermined by the person asking it. Typically, open-ended questions began
with Wh-words such as “What”, “Where”, "Why" and "How", or “When” and often such
questions asked for opinions, evaluations, reasons, opinions, feelings, predictions, experiences,
and are considered cognitively-challenging. Closed questions were identified as yes/no
questions, clarification questions, or choice questions that offered a predefined choice (e.g., “Is it
green or red?”). Often, the intended answer for such questions was a yes, no, or a one-word
answer. Another category of closed questions included test questions or questions for which the
answer was already known, had been previously read, or was clearly on the page.

The four responsive statement codes included comments, imitations, expansions, and
acknowledgements. Comments were identified as book-related statements, including
paraphrasing the story, labelling words, general book-related talk (e.g., “Let’s see what’s on the
next page.”), and book-related onomatopoeia. Onomatopoeic comments occurred when a child or
educator used words that imitated the sounds associated with the objects or actions they referred
to, such as, “Meow!” or “Bang!”.

Expansions were responsive statements made by the educators
that contained at least one word from the child’s previous utterance with syntactic or semantic
content added. For example, if child A said, “A moose.” and the educator immediately said,
“The moose is listening.”, this was coded as an expansion. Children’s utterances were not coded
for expansions. The third code for responsive statements was imitation. These utterances were
identified on the transcript where a speaker repeated the utterance of another speaker without
adding new vocabulary or grammatical information. These included reduced imitations that
omitted some lexical content. An example of a reduced imitation occurred when a child said,
“That is a big mean moose.” and another speaker responded with, “That is a big moose.”

Given

the nature of shared book reading sessions with small groups of preschool children, there is a
considerable amount of overlapping talk. For this reason, imitations were coded when any
speaker imitated another (using a full or reduced imitation) before the first person began
speaking another utterance. The fourth responsive statement code identified acknowledgements. These included all non-substantive talk that played a functional role in the turn-taking of discourse, including, agreement statements (e.g., “okay, oh-oh, no, yeah), and praise (i.e., “That’s right.”).

Other utterance codes used included commands, other, and unintelligible. Commands were all book-related utterances by the educator or a child that directed another person’s behaviour or talk. This included utterances that used directive words, such as, “tell me”, “show me”, “point to”, or “do X”. Commands also included educators’ use of a completion prompt. That occurred when the educator said the first part of a statement and then paused for the children to complete the statement. An example of a completion prompt might be, “Jack and Jill went up the” followed by a pause that provided the children with the opportunity to complete the statement by saying, “Hill”. Further to the book-related conversation, the utterances in the transcripts were coded for ‘off-topic’ talk, behaviour control, attention calls, or references to the speaker in the story (e.g., “He says”) prior to or following the reading of the text. These utterances were all coded as ‘Other’. Finally, all unintelligible or incomplete utterances, such as false starts or interruptions, were coded as ‘Uncodeable’.

Twenty percent of the transcripts were randomly selected and coded independently by the second author of this study to provide reliability estimates for each of the codes. Inter-rater reliability was calculated using the formula: number of agreements / (the number agreements + disagreements) x 100 (Sackett, 1978). The reliability for the codes was: 85% for open questions, 95% for closed questions, 96% for comments, 88% for expansions, 85% for imitations, 87% for commands, and 91% for acknowledgements. Overall inter-rater reliability for the coding system was 91%.

The frequencies of specific codes were calculated from the transcriptions of the book reading interactions using SALT. These data included: 1) the number of complete and intelligible utterances, 2) the mean length of utterances in words, 3) the number of different words spoken, and 4) the frequency of each utterance code. Finally the elapsed time of each reading session was used to calculate the rate per minute of each code. This was deemed to be important because the length of book reading time varied across educators.
2.5.3 Scoring for Educators’ use of Strategies to Promote Word Learning

The data for vocabulary teaching strategies was collected by pre-identifying ten words (five from each of the two storybooks) that were considered to be important for the children’s comprehension of the events taking place in the story. These words were shock, share, leap (or leapt), snuggle, friend, babysitter, South Pole, moose, thunderstorm and scare. For example, in the book *Little Yellow Dog Gets a Shock* (Simon, 2003), the polysemous word ‘shock’ is used to mean ‘a surprise’. Educators reading this story to preschool children may need to disambiguate the meaning of this word as some children may recognize this word to mean an electric or static shock. The professional development program instructed educators to use strategies to support the children’s word learning during the book reading. These include: a) select rare words or words that are important for understanding the story, b) stress these words by saying them alone and having the children say the word, c) explain these words, d) relate them to the children’s personal experience, and then e) repeat them. SALT’s Explore feature was used to retrieve a list of all of the utterances in the transcripts that included each of these 10 words, including all possible morphological variations of each word. A point system was developed to award one point for each occurrence of a word learning strategy, which included, select and stress (considered together), explain, relate, and repeat. A total score for the use of word learning strategies was generated for each educator for the 10 selected words at pretest and posttest. See Appendix C.

2.5.4 Coding system for identification of conversations within the transcripts

The third coding system was developed to identify each conversation on all pre- and posttest transcripts by manually marking conversations on the hard copy of each transcript. A conversation was defined as dialogue pertaining to one macrotopic that consisted of two or more conversational turns by two or more speakers. A conversation ended when the educator read the text or when there were interruptions to the book-related talk, such as behaviour management, off-topic talk, or the introduction of a new topic. Each conversation was counted for the number of turns (i.e., all consecutive utterances of one speaker constituted one turn) within one macrotopic for up to 15 minutes of time for the reading of the two books. Twenty percent of the transcripts were randomly selected and coded independently by a second coder to provide inter-rater reliability. Reliability was calculated for the identification of each conversation within a transcript and the number of conversational turns within that conversation. Inter-rater reliability
was calculated using the formula: number of agreements / (the number agreements + disagreements) x 100 (Sackett, 1978). The reliability for the identification of a conversation was 91%.

2.6 Data

All data were entered into an SPSS spreadsheet for analysis. These included all individual utterance codes for the educators and children at pretest and posttest analyzed at rate per minute, calculated scores for the educators’ use of strategies to promote word learning, and finally, the number and length of conversations based on 15 minutes of reading time. When the educators indicated to the research assistant that they were finished their book reading session prior to the completion of the 15 minutes, it was determined that this was reflective of their typical reading practice. When the educators continued longer than 15 minutes, conversations were examined up to the 15 minutes. In keeping with the professional development training, specifically, strive for five turns or longer, the number of conversations that were five or more turns long, were also entered into the database.

2.7 Results

The results are presented in three sections. The first section examines the quantitative and qualitative differences between the experimental and control groups at posttest on book-related talk during shared book reading following professional development. First we report on group differences in educators’ extra-textual talk and then we will report on group differences in the children’s extra-textual talk. The second section reports on group differences in educator and child use of different words and educators’ use of vocabulary teaching strategies. Finally, the third section compares the two groups on the number and length of their conversations. In order to determine if there were group differences, a series of one-way repeated-measures analyses of variance was used with group (experimental, control) as the between-subjects factor and time (pretest, posttest) as the within-subjects factors. The two-tailed alpha was set at .05. Partial eta squared (ηp²) was used to estimate the effect sizes of the repeated measures analyses and the resulting values were interpreted using Cohen's (1988) guidelines for judging the importance of eta squared (.02 = small; .13 = medium; and .26 = large). These guidelines are widely used in many educational and psychological studies of behaviour (e.g., Bakeman, 2005).
2.7.1 Educators’ use of utterances to facilitate conversation

The first question of this study examined whether the educators in the experimental and control groups differed in terms of the quantity of three qualitative aspects of educators’ language input at posttest. Specifically this question asked whether the educators in the two groups differed in terms of their rate of open questions, closed questions, and responsive comments. It was hypothesized that educators who received the professional development program would increase their use of open questions and responsive comments. Conversely, it was hypothesized that the experimental group would use a lower rate of closed questions. Table 4 presents the summary data for educators’ rate of open questions, closed questions, responsive statements, and overall book-related utterances. A repeated measures ANOVA revealed that there was a significant Group x Time interaction for the rate of open-ended questions, $F(1,18) = 4.419$, $p = .05$, partial eta squared ($\eta_p^2$) = 0.197. This effect size was medium according to guidelines provided by Bakeman, 2005. An examination of the data in Table 4 indicates that educators in the experimental group increased in their rate of open questions from 1.35 per minute to 1.64 whereas the control decreased in their use from 1.50 at pretest to 1.04 per minute at posttest. There was no main effect of time for this variable $F(1,18) = .208$, $p = .654$, $\eta_p^2 = .011$. The second repeated measures ANOVA yielded a significant Group x Time interaction for the rate of closed questions, $F(1,18) = 8.934$, $p = .008$, $\eta_p^2 = 0.332$. This effect size was large according to guidelines provided by Bakeman, 2005. An examination of the data in Table 4 indicates that, contrary to the hypothesis, educators in the experimental group increased their use of close questions from 2.80 per minute whereas the control group decreased their use of closed questions from 3.03 per minute to 2.38 at posttest. There was no main effect for time for closed questions, $F(1,18) = .407$, $p= .531$, $\eta_p^2 = .022$. The third part of this question examined the rate of responsive comments. There was also a significant Group x Time interaction for this variable, $F(1,18) = 12.061$, $p = .003$, $\eta_p^2 = 0.401$, with a large effect size according to Bakeman, 2005. The data in Table 4 indicate that educators in the experimental group increased their use of responsive statements from 4.76 per minute at pretest to 7.27 at posttest whereas the control group decreased in the use of responsive comments from 4.87 at pretest to 4.6 per minute at posttest. The main effect for time for responsive comments was also significant indicating that both groups increased over time, $F(1,18) = 8.366$, $p = .01$, $\eta_p^2 = .317$. Although it was not a primary research question, it was notable that there was a significant Group x Time interaction
Table 4

*Means and Standard Deviations for Talk per Minute during Shared Book Reading*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(n=10)</td>
<td>(n=10)</td>
<td></td>
</tr>
<tr>
<td>Educators’ Rate[^3^] of:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closed Questions</td>
<td>Pre</td>
<td>Post</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.80 (1.5)</td>
<td>3.03 (1.8)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>3.80 (1.0)</td>
<td>2.38 (1.0)</td>
</tr>
<tr>
<td>Open-ended Questions</td>
<td>Pre</td>
<td>Post</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.35 (1.0)</td>
<td>1.50 (0.5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>1.64 (0.8)</td>
<td>1.04 (0.3)</td>
</tr>
<tr>
<td>Responsive Comments</td>
<td>Pre</td>
<td>Post</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.76 (1.6)</td>
<td>4.87 (2.0)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>7.27 (2.2)</td>
<td>4.6 (1.2)</td>
</tr>
<tr>
<td>Overall Book-related Talk</td>
<td>Pre</td>
<td>Post</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11.05 (4.7)</td>
<td>11.63 (4.5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>15.41 (3.5)</td>
<td>10.36 (3.3)</td>
</tr>
<tr>
<td>Children’s Rate[^3^] of:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Talk</td>
<td>Pre</td>
<td>Post</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6.98 (4.4)</td>
<td>5.92 (3.4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>9.51 (2.3)</td>
<td>6.59 (2.6)</td>
</tr>
<tr>
<td>Responsive Comments</td>
<td>Pre</td>
<td>Post</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.86 (3.7)</td>
<td>5.09 (2.8)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>8.01 (2.0)</td>
<td>5.8 (2.1)</td>
</tr>
</tbody>
</table>

Note: Pre = pretest; Post = posttest.

[^1^]The experimental group included 10 educators and 39 children; the control group included 10 educators and 37 children.


[^3^]Rate was used because 11 transcripts included reading for less than 15 minutes (five at pretest and six at posttest).
for the rate of the educators’ overall number of book-related utterances, $F(1,18) = 12.998, p = .002, \eta_p^2 = 0.419$, with a large effect size according to Bakeman, 2005. The data in Table 4 indicate that educators in the experimental group increased their overall rate of book-related utterances from 11.0 per minute to 15.4 while the control group educators decreased their rate of book-related utterances from 11.6 utterances per minute at pretest to 10.4 at posttest. There was no main effect for time for the educators’ use of overall book-related utterances. In summary, the educators in the experimental group differed significantly from the control group on their overall book-related talk and two qualitative indices of language input (i.e., open questions and responsive statements) following participation in the professional development program.

2.7.2 The children’s responsiveness

This study also examined group differences in the quantity of the children’s extra-textual talk at posttest. Specifically, this question asked whether the children in the two groups differed in terms of their rate of talk during the book reading. It was hypothesized that the children in the experimental group would increase their overall amount of book-related talk (all utterances) and responsive comments. An examination of the data in Table 4 indicates that the children in the experimental group spoke, on average, 6.98 book-related utterances per minute at pretest and 9.51 per minute at posttest, whereas the children in the control group spoke, on average, 5.92 book-related utterances per minute at pretest and 6.59 at posttest. The repeated measures ANOVA revealed that there was no significant Group X Time interaction for rate of child talk during shared book reading at posttest, $F(1,18) = 2.115, p = .163, \eta_p^2 = .105$. However, there was a significant main effect of time for child talk, $F(1,18) = 6.313, p = .022, \eta_p^2 = .260$ indicating that the children in both groups increased their overall talk at posttest. Additionally, an examination of Table 4 indicates that children in the experimental group increased their use of responsive comments from 5.86 responsive comments per minute (i.e., book-related comments, imitations, and acknowledgements) at pretest to 8.01 at posttest whereas the children in the control group contributed 5.09 responsive comments to the book-related talk per minute at pretest and 5.8 at posttest. A repeated measures ANOVA revealed that there was not a significant Group x Time interaction for the rate of the children’s use of responsive statements at posttest, $F(1,18) = 1.885, p = .187, \eta_p^2 = .095$. However, there was a significant time effect for children’s rate of use of responsive comments, $F(1,18) = 6.978, p = .017, \eta_p^2 = .279$. This effect size was large according to guidelines provided by Bakeman, 2005.
2.7.3 Vocabulary

The second question of this study looked at the vocabulary use of the educators and children as well as the vocabulary teaching strategies utilized by the educators. This question included three analyses of group differences (a) the educators’ use of a variety of different words in their book-related talk; (b) the children’s use of a greater variety of words; and (c) the educators’ use of explicit strategies to promote word learning.

2.7.3.1 Implicit vocabulary learning strategies

The first analysis examined whether there were differences between the experimental and control groups in terms of the number of different words spoken by the educators and the children. It was hypothesized that the educators in the experimental group would use more different words at posttest (an indicator of vocabulary diversity) and that the children in that group would also use a greater number of different words as compared to the control group. Table 5 presents the summary data for both the educators’ and the children’s number of different words spoken during extra-textual book-related conversations (as calculated by rate per minute). A repeated measures ANOVA on the educators’ use of different words revealed that there was a significant Group X Time interaction for this variable, $F(1,18) = 18.019, p = .001, \eta_p^2 = .500$. The data in Table 5 indicate that the educators in the experimental group increased their use of greater lexical diversity in their book-related talk using 13.09 different words per minute at pretest and 16.41 at posttest. The educators in the control group used, on average, 14.57 different words per minute in extra-textual talk at pretest and a rate of 13.66 different words per minute at posttest. This finding is consistent with our hypothesis that predicted that educators who participated in the professional development training would use a greater diversity of words following the program. Moreover, there was a main effect for time for this variable $F(1,18) = 5.834, p = .027, \eta_p^2 = .245$ indicating that educators in both groups increased their use of more different words at posttest. A repeated measures ANOVA on the children’s use of different words per minute revealed that there was not a significant Group X Time interaction at posttest, although it was approaching significance, $F(1,18) = 4.263, p = .054, \eta_p^2 = 0.191$. This effect size was medium according to the guidelines provided by Bakeman, 2005. An examination of the data in Table 5 indicates that the children in the experimental group increased their use of different words in their book-related talk by using, on average, 7.66 different words per minute at pretest and 11.19
Table 5

Means and Standard Deviations for Rate of Different Words Spoken and Vocabulary Teaching Strategies

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental Group</th>
<th>Control Group</th>
<th>p value for Group x Time Interaction&lt;sup&gt;3&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(n = 39)</td>
<td>(n = 37)</td>
<td></td>
</tr>
<tr>
<td>Educator’s Rate of Different Words&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Pre 13.09 (3.8)</td>
<td>14.57 (3.0)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post 16.41 (2.4)</td>
<td>13.66 (2.7)</td>
<td>.001</td>
</tr>
<tr>
<td>Educator’s Vocabulary Teaching Strategies&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Pre 14.20 (9.2)</td>
<td>15.50 (6.6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post 10.40 (5.9)</td>
<td>14.20 (10.5)</td>
<td>.482</td>
</tr>
<tr>
<td>Children’s Rate of Different Word&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Pre 7.66 (4.3)</td>
<td>7.19 (2.7)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post 11.19 (2.1)</td>
<td>8.74 (1.9)</td>
<td>.054</td>
</tr>
</tbody>
</table>

Note: Pre = pretest; Post = posttest.

<sup>1</sup>Based on rate per minute.

<sup>2</sup>Maximum of 40 points.

<sup>3</sup>p value based on a two-tailed alpha.

at posttest per minute. Thus the children in the experimental group used a greater number of different words in their book-related talk during shared book reading following the program. In addition, there was a main effect for time for children’s use of different words as calculated at a rate per minute, \( F(1,18) = 28.062, p=.001, \eta_p^2 = .609 \). This indicates that children in both groups increased their diversity of word use from pretest to posttest.

2.7.3.2 Explicit vocabulary learning strategies

Next, we examined whether educators in the experimental group differed in their use of strategies to teach vocabulary words at posttest as compared to the educators in the control
group. It was hypothesized that educators who received the program would use more strategies to facilitate word learning than the control group (i.e., select/stress, explain, relate, repeat). This hypothesis was not substantiated as there was no significant Group x Time interaction for educator use of strategies to promote word learning, $F(1,18) = 0.516, p = .482, \eta_p^2 = .028$, nor was there a main effect for time for this variable $F(1,18) = 2.148, p = .160, \eta_p^2 = .107$. An examination of the data in Table 5 indicates that educators in the experimental group decreased their use of explicit strategies to promote word learning from 14.20 during the book reading session to 10.40 while the control group educators used, on average, 15.5 word learning strategies at pretest and 14.20 at posttest.

2.7.4 Number and length of book-related conversations

The third question of this study investigated whether the educators in the experimental and control groups differed in the number and length of their conversations. A conversation was the total number of educator and child turns on one topic. Table 6 presents the summary data for the number and length of conversations during the small group book-reading sessions across the two groups. It was hypothesized that the educators in the experimental group would have more conversations during shared book reading and that they would be longer. A repeated measures ANOVA did not yield a significant difference in the number of book-related conversations in the experimental and control groups, Group x Time interaction, $F(1,18) = .401, p = .535, \eta_p^2 = 0.022$, nor was there a main effect for time, $F(1,18) = .062, p = .806, \eta_p^2 = 0.003$. An examination of Table 6 indicates that the experimental group had a mean number of 34.6 conversations at pretest and 36.9 at posttest while the control group had a mean number of 36.1 conversations at pretest and 35.1 at posttest. With regard to the length of the book-related conversations, it was further hypothesized that educators who participated in the professional development program would have longer book-related conversations as this was taught in the professional development program. A repeated measures ANOVA yielded a significant Group X Time interaction for this variable, $F(1,18) = 4.615, p = .046, \eta_p^2 = 0.204$. This effect size was medium according to guidelines provided by Bakeman, 2005. An examination of the data in Table 6 indicates that educators and children in the experimental group increased in the mean length of their book-related conversations from 5.29 turns at pretest to 7.3 turns at posttest while the control group also increased in the mean length of conversations from 4.63 turns at pretest to
### Table 6

**Summary Data for the Educators’ and Children’s Conversations during Shared Book Reading**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental Group(^1)</th>
<th>Control Group(^1)</th>
<th>(p) values for Group x Time Interactions(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Conversations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>34.60 (10.7)</td>
<td>36.10 (9.6)</td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>36.90 (6.8)</td>
<td>35.10 (11.7)</td>
<td>.535</td>
</tr>
<tr>
<td>Mean Length of Conversations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>5.29 (2.5)</td>
<td>4.63 (1.6)</td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>7.30 (2.0)</td>
<td>4.88 (1.0)</td>
<td>.046</td>
</tr>
<tr>
<td># of Conversations greater than or equal to 5 turns</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>12.90 (6.8)</td>
<td>12.60 (6.2)</td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>17.50 (4.0)</td>
<td>11.40 (3.3)</td>
<td>.031</td>
</tr>
</tbody>
</table>

Note: Pre = pretest; Post = posttest.

\(^1\) The experimental group included 10 educators and 39 children; the control group included 10 educators and 37 children.

\(^2\) \(p\) value is based on a two-tailed alpha.

4.88 at posttest. There was also a main effect for time, \(F(1,18) = 7.600, p=.013, \eta_p^2 = .297\), indicating that both groups increased their length of conversations from pretest to postest. This effect size was medium according to guidelines provided by Bakeman, 2005. Additionally, the current study hypothesized that educators and children in the experimental group would participate in significantly more conversations that were five or more turns in length, referred to in the professional development program as *Strive for Five* (Dickinson, 2003). A repeated measures ANOVA yielded that there was a significant Group x Time interaction for the number of conversations than consisted of more than five turns (“strive for five”), \(F(1,18) = 5.465, p = .031, \eta_p^2 = 0.233\). This effect size was medium according to guidelines provided by Bakeman, 2005. There was no main effect for time for this variable, \(F(1,18) = 1.878, p = .187, \eta_p^2 = 0.094\). Table 6 indicates that educators and children in the experimental group participated in a greater number of long conversations compared to pretest, that is, 12.90 at pretest to 17.5 at posttest.
whereas the control group decreased in the number of long conversations as indicated by 12.6 long conversations at pretest and 11.4 long conversations at posttest.

2.7.5 Post-hoc analysis of conversations

A post hoc analysis was conducted to further explore the finding that educators and children in the experimental group participated in significantly longer conversations at posttest as compared to the control group. This follow-up analysis investigated the nature of the educator-child talk that may have accounted for these longer conversations. The rationale for identifying a ‘type’ of conversation is based on a previous study that examined different types of educator ‘talk’ and the child responses they elicit. Zucker, Justice, Piasta, and Kaderavek (2010) found that preschool children were more likely to respond to educators’ questions or comments using the same level of abstraction. That is, if the educators asked an inferential question, the children were more likely to respond with an inferential utterance. Building on this finding, all conversations were coded for the level of abstraction. A coding system was developed to identify the level of cognitive and linguistic challenge they presented for the children, that is, literal or inferential talk and whether they centred on the information in the story or personal experiences related to the story topic. A summary of the coding system can be found in Appendix C.

We hypothesized that educators in the experimental group would have more long conversations that were inferential in nature as compared to the control group given that the educators received instruction in strategies to promote more decontextualized talk (Greenberg & Weitzman, 2010). Also we predicted that these conversations would be related to the educators’ and children’s personal experiences. This prediction was based on findings of Girolametto, Weitzman, Lefebvre, and Greenberg (2007) who reported that following professional development, preschool educators used significantly more abstract utterances related to emotions and the children’s personal experiences related to the story and that this, in turn, elicited more responsive child talk (i.e., Level 3 talk (Blank & While, 1986)). Thus, we hypothesized that the educators and children would have a greater number of conversations that were inferential personal-experience in content. A series of t-tests was done to compare the two groups at pretest in numbers of short or long conversations within any of the four categories of type of conversation. There were no significant differences between the experimental and control group at pretest on numbers of short or long conversations in any of the four categories $t(2, 18)s = -1.448 – 1.337.$
Given that the two groups did not differ and this study included a small sample size in each group (N=10), this analysis included both groups of educators, experimental and control. Table 7 presents the means and standard deviations of the number of conversations that occurred by theme during the book reading.

Table 7

Means and Standard Deviations for the Themes of Conversations

<table>
<thead>
<tr>
<th>Type of Conversation</th>
<th>Pretest Mean (SD)</th>
<th>Posttest Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literal - Text</td>
<td>3.8 (2.7)</td>
<td>3.85 (2.8)</td>
</tr>
<tr>
<td>Literal - Personal</td>
<td>1.85 (1.1)</td>
<td>2.25 (1.3)</td>
</tr>
<tr>
<td>Inferential - Text</td>
<td>6.1 (3.9)</td>
<td>5.9 (3.8)</td>
</tr>
<tr>
<td>Inferential - Personal</td>
<td>.95 (1.1)</td>
<td>2.2 (2.9)</td>
</tr>
</tbody>
</table>

A Pearson Product-Moment Correlation coefficient was used to assess the relationship between the four themes of conversations (i.e., literal-text, literal-personal, inferential-text, inferential-personal) and mean length of conversation. An examination of Table 8 indicates that there was a positive correlation between the number of long inferential-text conversations (five or more) (M = 5.9, SD = 3.8, N = 20) and mean length of conversations (M = 6.1, SD = 1.99, N = 20) at posttest, r (18) = .571, p = .009. Increases in the number of inferential-text conversations were correlated with increases in the mean length of the book-related conversations between educators and children during small group book reading.
Table 8

*Pearson Product Moment Correlations for Themes of Conversation and Mean Length of Conversation*

<table>
<thead>
<tr>
<th></th>
<th>Literal-text</th>
<th>Literal-Personal</th>
<th>Inferential-Text</th>
<th>Inferential-Personal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Length of Conversation</td>
<td>-.062</td>
<td>-.228</td>
<td>.571**</td>
<td>.384</td>
</tr>
</tbody>
</table>

* *p < .05  ** *p < .01  *** *p < .001
Chapter 3

3 Discussion

The current study had four important findings. The first major finding was that educators in the experimental group increased their use of open questions and responsive statements in their extra-textual talk during small group shared book reading. The second major finding of this study was related to word use. Following participation in the professional development program, the educators used a greater number of different words in their book-related talk. Third, these behavioural changes in the educators’ extra-textual talk following professional development resulted in increased child participation in turn-taking during book-related conversations resulting in longer conversations and significantly more conversations that were at least five turns long. Fourth, a post-hoc examination of the data revealed that the length of the conversations was correlated with the number of educator-child inferential conversations, or the talk that goes beyond the ‘here and now’.

3.1 Impact of professional development on educator talk

The first major finding indicated that following participation in this professional development program, educators made significant changes in the way they talked to preschool children during small group book reading. The educators in the experimental group used significantly higher rates of open questions and responsive statements at posttest compared to the control group. This is an important finding given the facilitative nature of both these utterance types for eliciting children’s book-related talk and maintaining child engagement. Open questions have been found to elicit longer child responses and often result in more complex language (Dickinson, 2003, de Rivera et al., 2005). Educators’ use of open questions has also been associated with improved child outcomes in oral language skills (Mol, Bus, deJong, & Smeets, 2008) and educator-child talk that is more cognitively challenging or inferential in nature (Zucker, Justice, Piasta, & Kaderavek, 2010). Further, educators’ responsive comments (i.e., contingent comments, imitations, expansions, acknowledgements) validate the children’s contributions to the conversation, scaffold their participation, expand on or extend the topic of the moment, and provide the children with linguistic models through which they can learn more complex language (Culatta, Blank, & Black, 2010). These statements may enable the educator to
facilitate the children’s talk and joint attention to a single topic (Girolametto & Weitzman, 2002; Turnbull, Anthony, Justice, & Bowles, 2009) while providing an opportunity to repair and elaborate on the children’s utterances by adding syntactic and semantic content (Nelson, Camarata, Welsh, Butkovsky, & Camarata, 1996). Studies have shown that educators’ responsiveness to children’s utterances is correlated with the quality of the classroom language environment (Connor, Son, Hindman, & Morrison, 2005; Wasik & Bond, 2006) and enhanced child language outcomes (Dickinson & Tabors, 2001; Girolametto & Weitzman, 2002; Snow, Burns, & Griffin, 1998). Although descriptive studies have reported on educators’ use of responsiveness (Girolametto & Weitzman, 2002), there are no known experimental studies that have examined group differences in the educators’ use of responsive statements in shared book reading following professional development. Thus, this positive finding reveals that the educators in the experimental program increased key features of language input that are facilitative of children’s language development.

This increase in the educators’ use of open questions and responsive comments during shared book reading might reflect an important shift for some educators from an instructional or directive practice to a conversational or group discovery experience (Blank, 2002). When educators invite children to participate in the book-related talk by asking open or unconstrained questions and then respond contingently to the children’s utterances, they allow the children to influence the direction of the discussion (Culatta, Blank, & Black, 2010). The book reading experience has the potential to become a dynamic interaction between the adult, children, and the book to the extent that they each contribute to the talk that ensues (Pardo, 2004; Price, van Kleeck, & Huberty, 2009). The educator plays a central role in facilitating this book-related talk, by creating and maintaining the conversations. Theoretically, these findings reflect some tenets of the socio-cultural theory of child development (Vygotsky, 1978). For example, the findings suggest that these educators may be creating a culture of leaning by valuing and reinforcing the children’s active participation as co-constructors in their own learning (Rogoff, 1990). In the context of the current study, educators who participated in this professional development program had children in their small groups who used more productive language in terms of vocabulary use and length of conversation.

Contrary to our expectation, the educators in the experimental group asked significantly more closed questions at posttest compared to the control group. Given the constrained nature of these
questions for eliciting minimal child responses, this was a surprising finding. However, a post-
hoc examination of the data revealed that the observed increase in closed questions was
proportional to the educators’ overall increase in extra-textual talk. That is, both their rate of
closed questions and their overall rate of talk increased by one third or 33% relative to pretest
rates per minute. In doing so, the educators in the experimental group maintained a certain
proportion of low demand or constrained questions in their book-related talk. Blank and her
colleagues (1978a) recommended that preschool educators aim for 70% of their questions in
conversation to be literal in order to provide children with sufficient opportunities to understand
the conversation and to actively participate in it. An examination of the literature indicates that
other studies have also reported that adults asked approximately two thirds low level or closed
questions during book reading (de Rivera et al., 2005; van Kleeck, Gillam, Hamilton, &
McGrath, 1997). Although the educators who participated in this professional development
program asked significantly more closed questions than the control group at posttest, this
difference was relative to the amount of overall talk that took place during the reading
experience. The fact that the educators maintained this proportion of low demand questions in
their book-related talk may indicate that closed questions play a facilitative role in scaffolding
children’s participation in shared reading. It is possible that educators use closed questions to
accommodate children with a variety of language learning needs in their small group. For
example, Blewitt and her colleagues (2009) assessed preschool children’s word learning in three
conditions: a) when educators asked only low demand or closed questions during book reading,
b) only high demand questions, and c) a scaffolding condition that initially involved asking low
demand questions and later in the reading, asked high demand questions. The scaffolding
condition included 67% low demand and 33% high demand questions and resulted in deeper
understanding of word meanings compared to the other two conditions. Other studies have also
reported on educators’ use of a range of scaffolds to engage children in book-related
conversation, such as, first asking low-demand questions that provide opportunities for quieter
children or those with lower levels of language to talk and later asking a greater number of high
demand or open questions (Pentimonti & Justice, 2010). In order to effectively scaffold
children’s engagement in conversation, educators need to be aware of the language learning
needs of the children in their group and capable of using a variety of strategies to elicit a verbal
response from children (Pentimonti & Justice, 2010). In the current study, the educators’ use of
closed questions in the experimental group may have played a role in eliciting responses from
quieter children and therefore contributed to maintaining longer conversations given that more children were able to take a turn. These findings suggest that there is a need for both open and closed questions for engaging children in book-related talk and in building and maintaining conversation for children with diverse language learning needs (Blewitt et al., 2009; Francks, 1979; Pentimonti & Justice, 2010). Future research may be beneficial to determine the extent to which closed questions contribute to length of conversation following participation in professional development.

3.2 Impact of professional development on the children’s talk

An important indicator of increased child engagement in book-related conversations would be enhanced children’s talkativeness during book reading. The current study investigated the effects of educators’ participation in professional development on the children’s responsiveness in book-related conversations. Contrary to our expectations, the children in the experimental group did not show significant group differences on overall rate of talk and use of responsive statements (i.e., book-related comments, imitations, and acknowledgements). These findings are surprising given that the experimental group maintained significantly longer conversations on topic. In the current study there was a great deal of variance in both the experimental group and the control group at pretest in the rate of the children’s book-related talk, with a wider variance in the experimental group. Importantly, this variance was considerably reduced in the experimental group at posttest compared to the control groups. In other words, the variance in the rate of the children’s talk in the experimental group was smaller than that of the control group. Future shared book reading studies are needed to identify children’s talkativeness during shared book reading conversations using larger sample sizes.

3.3 Impact of professional development on vocabulary learning opportunities

The second major finding of the study relates to the impact of the educators’ participation in professional development on the educators’ and children’s use of diverse vocabulary in their book-related talk. The educators in the experimental group used a greater variety of words in their extra-textual talk and the results for the children in that group approached significance ($p = .054$). This finding provides support for promoting shared book reading conversations as a means of providing a richer linguistic environment for preschool children. Vocabulary learning
is an important outcome of shared book reading and preschool children’s incidental exposure to novel words has been shown to result in word learning in previous work on shared reading (Sénéchal & Cornell, 1993). Vygotsky (1978) suggests that preschool educators promote young children’s implicit learning of words and word meaning when they use a varied vocabulary, modelling words that are both common in the children’s language environment as well as words that are slightly above the children’s level of language use.

Explicit instruction that defines and elaborates on word meaning can also be an important strategy for young children’s word learning (Maynard, Pullen, & Coyne, 2010). However, the educators in the experimental group did not use the strategies taught in the intervention for explicitly promoting word learning. The literature indicates mixed results in the effectiveness of interventions for enhancing educators’ use of vocabulary teaching strategies. Powell, Diamond, Burchinal, and Koehler (2010) found no difference in educators’ use of strategies to promote word learning or in children’s receptive language outcomes after either a web-based or coursework instructional design. In contrast, Wasik, Bond and Hindman (2006) reported significant positive changes in educators’ use of explicit word learning strategies after a considerably longer 9-month intervention program. Three possible explanations for the lack of findings for the educators in the current study are tenable. First, the text in the books did not include many rare words and educators reading the books may have assumed that the words in the two books were familiar to the children. In future, this task may be enhanced by replacing common words with rare synonyms (e.g., replace stir with whisk), a technique used by Sénéchal and Cornell (1993). Second, the method of scoring educators’ use of explicit strategies to promote word learning focused on ten target words from the text that were deemed to be important for children’s comprehension of the story. However, some educators used the strategies to promote word learning for different words found in the text while others elaborated on words related to the pictures in the books. For example, one educator elaborated on the words “vanity mirror” after a child asked about the picture (this did not appear in the text). Although the technique in our current study focused on words that the first author deemed to be important to children’s comprehension of the story, future work may consider all words that educators isolate and expand on. Third, this experimental design involved the educators reading the same two books at pretest and posttest. This may have potentially reduced the number of words the educators would expand on at posttest given their familiarity with the books after having read
them at pretest. It may be advisable to introduce a new book at posttest to provide a better indication of educator use of strategies. Future work needs to be done to identify strategies that support educators in promoting explicit word learning.

3.4 Impact of professional development on educator-child conversations

The third major finding of this study relates to the impact of the professional development program on the educator-child conversations that took place during shared book reading. Overall, the educators learned to engage the children in longer book-related conversations following participation in professional development. The adult-child conversations that occurred within the experimental group were, on average, one third longer than those of the control group at posttest (i.e., mean length of 7.3 turns as compared to 4.8 turns by the control group). Furthermore, the educators and children in the experimental group participated in a greater number of long conversations (i.e., greater than five turns). These findings demonstrate positive effects of professional development on preschool educators’ ability to engage children in extended discourse related to a single topic. Adult-child conversations are considered to make important contribution to children’s language development (Dickinson, 2003; Dickinson, 2006; McCabe & Peterson, 1991; Peterson, Jesso, & McCabe, 1999) and longer conversations have been shown to be positively correlated with enhanced language outcomes (Ruston & Schwanenflugel, 2010; Zimmerman, Gilkerson, Richards, Christakis, Xu, Gray, & Yapanel, 2009). One mechanism by which longer conversations promote language development resides in the supposition that longer conversations explore a topic in greater depth (Zimmerman, et al., 2009). Within longer conversations, educators have more opportunities to repair or expand on children’s utterances by adding additional semantic and syntactic content that is within the children’s zone of proximal development. Dickinson recommended that educators aim to engage children in conversations that were five or more turns in length using a strategy referred to as “Strive for five” (Dickinson, 2003; Greenberg & Weitzman, 2010). The purpose of this strategy is to provide educators with a goal of five turns that serves to remind them to elaborate on or deepen a single topic beyond a more typical educator-student exchange made up of “question-response-feedback”. This study indicates that, on average, educators and children in the experimental group were able to maintain conversations for at least five turns for more than half of their conversations. In the current study, the educators used significantly more questions to engage children in book-related talk and responsive comments that were contingent on the
children’s utterances. By inviting the children’s talk and responding contingently, the educators incorporated the children’s ideas and contributions into the conversation this may have allowed the children to influence the direction of the discussion (Culatta, Blank, & Black, 2010; Gjems, 2010). Adults’ responsiveness validates the children’s ideas and utterances and potentially provides important feedback to them. Theoretically, as children participate in discourse, listening, practicing, and monitoring the way the educator responds to their utterances, they become co-constructers of their own language learning (Rogoff, 1976). This study demonstrates that educators can benefit from instruction in the use of “Strive for Five” to maintain conversations longer than five turns.

3.4.1 Inferential talk and longer conversations

Follow-up analyses were conducted to explore a possible mechanism or type of conversation that accounts for these longer conversations. The working hypothesis was that longer conversations would be correlated with inferential-personal talk. Specifically, these conversations included book-related talk that went beyond the ‘here and now’ including information and language not immediately available in the text of the story. Further, these discussions included talk about the children’s or educator’s personal experiences related to the events of the book. The results of the analysis indicated that longer conversations were related to inferential-text talk ($r = .57$), or conversation that was decontextualized yet focused on the events or characters in the story (e.g., how a character might feel about the events of the story) rather than the speaker’s personal experience related to the events of the book. These results indicate that as the educators facilitated more inferential conversations, they had longer conversations related to a single topic. Furthermore, these inferential conversations focused on the characters and events of the book rather than the personal experiences of the educator or children. These findings provide additional support for instructing educators’ to use a greater amount of inferential talk during book reading as it contributes to longer conversations or a greater number of turns related to one topic. Longer extra-textual conversations are indicative of children’s engagement as they are taking more turns related to a single topic. Additionally, long conversations are considered to be more cognitively challenging in that they cover each topic in greater depth (Dickinson & Smith, 1994; Massey, 2004) and provide educators with a greater number of opportunities to model more complex expressive language (Crain-Thoreson & Dale, 1999; Doyle & Bramwell, 2006; Hargrave & Sénéchal, 2000; van Kleeck, 2008; Wasik & Bond, 2001). The results of this post
hoc analysis indicate that inferential talk is associated with enhanced child engagement in conversations and may be a mechanism that permits longer conversational topics to emerge and develop.

The current study used a novel coding system to identify and classify conversations. This provided a means of determining the overall theme of each conversation, that is, literal, inferential, text-specific, or personal experiences related to the content of the book being read. This method of coding conversations provides additional insight into educator practice following professional development, in that, it goes beyond a system of coding and analyzing individual utterances. For example, in the current professional development program, educators were instructed to use verbal strategies to engage children in book-related talk that is more inferential in nature and to aim to have longer conversations. This method of analysis provides a means of examining the types of conversations that engage children to take a conversational turn and the length of those conversations. Further, this method may provide other insights into this talk, such as, what types of conversations educators allow to go on for successive turns rather than returning to the book reading. For example, educators may be more likely to permit longer conversations that focus on the text alone rather than the children’s personal experiences given the potential for young children to go off-topic. However, making connections between the text and self, specifically the children’s prior knowledge and experiences, may enhance young children’s comprehension of what is being read (Pardo, 2004). Children who do not have the prior knowledge or experience related to the events of the text may benefit from hearing another child’s experiences. Future research might benefit from coding adult-child conversations in order to explore the associations between different types of conversations, their use, and child language outcomes related to each.

The current study linked inferential text talk with longer conversations and this finding may provide educators with a tangible method of achieving longer conversations. Specifically, educators may consider inferential-text questions to embed into their book reading before sitting down to read to the children (i.e., asking how the character feels) with greater confidence that the children will respond (van Kleeck et al., 2006). Professional development, such as this one, that instructs educators to engage children in book-related conversations may improve their early success in achieving longer conversations by including specific instruction in the use of inferential-text questions.
3.5 Professional Development

Preschool educators’ access to professional development is a structural measure of quality child care that has been associated with enhanced child language outcomes (Burchinal, Roberts, Nabors, & Bryant, 1996). However, historically the effectiveness of most professional development to bring about change in educators’ practice has been equivocal (Guskey, 1986; Clarke & Hollingsworth, 1986). Guskey (2002) proposes that professional development will be most effective when it addresses what motivates educators to participate in training and what aspects of training will result in change in practice. Professional development for educators needs to offer instruction that will result in improved outcomes for the children in their care (Guskey, 2002). In order to affect change in what is already a busy preschool day, the training will be most effective when it provides specific, practical strategies that can easily be incorporated into the existing curriculum. *ABC and Beyond™: Building Emergent Literacy in Early Childhood Settings* (Weitzman & Greenberg, 2010) provides instruction in the use of shared book reading, a strategy that has been linked with important child development outcomes for children, particularly those children who are at-risk (Crain-Thoreson & Dale, 1999; Gerde & Powell, 2009; Hargrave & Sénéchal, 2000; Justice, Meier, & Walpole, 2005; Lonigan & Whitehurst, 1998; NELP, 2008; Roberts, Jurgens, & Burchinal, 2005; Wasik & Bond, 2001). Reading books aloud to children is a classroom activity that occurs in many preschools making it possible for educators to implement the strategies taught in the training right away with little to no cost to the program. In the current study, educators were successful in learning to use verbal strategies to engage preschool children in classroom conversation, a process measure of quality preschool programs. Future studies are needed to identify whether the effects of educators’ participation in professional development for shared book reading practice generalize to their ability to engage children in conversations throughout the day. Additionally, it would be important to establish whether the changes in educator practice during shared book reading were maintained over time (i.e., one year later).

3.6 Conclusion

This study investigated preschool educators’ ability to change the way they converse with children during book reading following professional development and the effects of these changes in practice on high risk children’s talk and engagement in book-related conversation.
The current study indicates that this professional development shows some promising results for enhancing educators’ ability to engage small groups of preschool children in book related talk.

There are several limitations that should be considered when reflecting on the outcomes of this study and in looking ahead to future research. The current study was conducted with preschool educators who are early childhood educators who work in classrooms with a one to eight ratio and are responsible for curricular planning for a classroom of 16-24 children. This makes it difficult to know if the same results would occur with a larger group of children. Future studies may benefit from increased ecological validity by investigating educators’ use of strategies with a group of eight children (Hargrave & Sénéchal, 2000) to be more reflective of typical classroom practice.

Future studies that examine changes in educators’ practice at the utterance level and children’s responsiveness to educators’ talk following professional development may benefit from use of standardized language measures to assess the children’s language ability both at pretest and posttest. This will allow for additional analyses that include child language outcomes. Further, a longitudinal follow-up would enable us to report on maintenance of educator use of strategies. Additionally, studies are needed that report on child engagement or responsiveness in discourse during shared book reading in preschool and long-term language outcomes as a result of educator practice.

The two books used in the current study did not introduce many rare words making it difficult to know if educators’ lack of use of explicit word learning strategies was related to not consolidating the use of the skills taught in the professional development program or a possible assumption that the children were familiar with these words. Future studies should use text with some rare words as targets or replace words in existing text with lower frequency synonyms. Also this study would be enhanced by adding a different unfamiliar book at posttest to see how educators’ reading of a new unfamiliar book would compare with reading of a familiar book. The current study may have results that are reflective of the educators’ and children’s familiarity with and previous discussion about these same books that different results may occur by adding a different book to compare amount of educator talk and child talk after intervention as compared to a control group.
In conclusion, *ABC and Beyond™: Building Emergent Literacy in Early Childhood Settings* (Weitzman & Greenberg, 2010) shows promising short-term results for providing preschool educators with the strategies to facilitate conversations during shared book reading. This study proposes a method of coding conversations to better understand the effects of professional development on educators’ ability to promote classroom conversation. Overall, these improvements in educators’ ability to engage children in longer book-related conversations may result in a significant change in the language environment within preschool program.
References


## Appendix A

Coding System for Shared Book Reading: Utterance Codes

<table>
<thead>
<tr>
<th>Category</th>
<th>Utterance</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions</td>
<td>Open Questions [OQ]</td>
<td>– the answer is not constrained or predetermined by the asker</td>
<td>- usually begin with “What”, “Where”, &quot;Why&quot;, and &quot;How&quot;</td>
</tr>
<tr>
<td></td>
<td>Closed Questions [CQ]</td>
<td>– the answer is constrained by the asker</td>
<td>- yes/no questions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- clarification questions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- choice questions (e.g., Do you want red or green?)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- test questions asking for information just read or on the picture</td>
</tr>
<tr>
<td>Responsive Statements</td>
<td>Comment [CM]</td>
<td>– a statement relating to the story</td>
<td>- paraphrasing the story</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- a label alone or a label plus other information</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>– story-related onomatopoeia</td>
</tr>
<tr>
<td></td>
<td>Expansion [EX]</td>
<td>- a statement that contains at least one content word from the child’s utterance plus additional syntactic or semantic content.</td>
<td>Child: The bird {points to book}.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E: The bird is watching them [EX].</td>
</tr>
</tbody>
</table>

*Educators only*
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Example 1</th>
<th>Example 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imitation [IM]</td>
<td>– repetition of the utterance of another speaker without adding vocabulary or grammatical information</td>
<td>Child: I’m scared of the dark.                                           Educator: I’m scared of the dark [IM].</td>
<td></td>
</tr>
<tr>
<td>Acknowledgements [AC]</td>
<td>- all affirmations and praise</td>
<td>okay, oh, no, yes, yeah, uuhh, mmh, interesting, I know, you’re right</td>
<td></td>
</tr>
<tr>
<td>Commands [CO]</td>
<td>- all utterances that direct another person’s behaviour or talk.</td>
<td>- utterances that use directive words such as “tell me, show me, point to”</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- completion prompts (e.g., Jack and Jill went up the __ (educator waits and the children say “hill”))</td>
<td></td>
</tr>
<tr>
<td>Other [O]</td>
<td>- questions or statements that are off topic, behaviour control, attention calls to allocate children’s turn to speak</td>
<td></td>
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</tbody>
</table>
Appendix B

Scoring system for educators’ use of explicit strategies to promote word learning

Educators were taught to identify words in the story and use four strategies to elaborate on word meaning to promote word learning during shared story book reading. One point was awarded for each use of a strategy for the 10 target words. The points were summed to generate a total score.

These four strategies are:
1. Select/stress – when the educator stressed a word by saying it in isolation (e.g., babysitter or the babysitter or babysit or this is the babysitter or its’ a babysitter).
2. Explain – when the educator offered a definition or a synonym for the word.
3. Relate – when educators related the word to something in the child’s experience or that the child can identify with that helps to associate the word with a real world context.
4. Repeat – when the educator repeated the word during book-related talk.
Appendix C

Coding System for Conversational Themes

*Literal text-specific [LT]* – These conversations discussed the pictures and the events just read in the story reading (i.e., What is this? Where is he now?).

Example: E: Where is Gingercat in this picture [CQ]?
[LT] - 3 C: She’s right there {pointing} [CM].
E: That’s right Joey [AC].

*Literal personal experience [LP]* – These conversations discussed individuals’ personal experience in relation to the events on the page or what was just read in the text.

Example: E: {Sarah heated up pizza with pepperoni and pineapple on it} [reading].
[LP] - 6 C1: I like pepperoni pizza too [CM].
C1: Just not with pineapple [CM].
C2: Me too [AC].
E: Miranda I know you like pepperoni and pineapple pizza [CM].
C3: I do [CM].
C4: I like pepperoni pizza [CM].

*Inferential text-specific [IT]* – These conversations included discussion about the characters and events of the story that went beyond what could be readily perceived, such as a discussion of a character’s feelings, motivation or prediction of what would happen next.

Example: E: Look at the way she is sitting in the closet [CO].
[IT] - 4 E: How do you think she is feeling [OQ]?
C: She looks mad [CM].
E: What makes you think that Tim [OQ]?
C: She has her arms crossed like this {crossing his arms} [CM].

*Inferential personal experience [IP]* – These conversations included talk about the children’s and/or educators’ personal experiences or knowledge related to the characters and/or events in the story but going beyond the text to include information not readily available, such as, what
they would do in the situation the character found himself in.

Example:  
E: {Are you still going out?} [reading].
E: {Yes Pumpkin} [reading].

[IP] - 5  
C: My mommy went to stay at grandma/’s house and I cry/ed [CM].
E: Your mommy went to your grandma/’s house [CQ]?  
C: Yeah but she came back [CM].
E: I bet you were happy to see her [CM].
Copyright Acknowledgements

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