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**The Effects of Adult Book Reading Style on Preschooler's Emergent Literacy
Skills.**

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Abstract

Recently, dialogic reading, a highly interactive adult reading style, has been advocated as the best way to read to young children (Whitehurst et al., 1988; 1994). As children's skill level interacts with adult style, however, the quality, rather than quantity, of adult/child interaction during book reading may be important. This study compared dialogic with performance oriented reading. Interactions in this style are of a higher level than those in the dialogic style. It was therefore hypothesised that highly skilled children would benefit most from performance oriented reading, whereas less skilled children would benefit most from the simpler dialogic reading. Children in the control group were expected to show intermediate gains as they remained in literacy rich environments. Fifty-six 4-year-old children were pre- and post-tested on vocabulary, print and story skills and randomly assigned to either the dialogic, performance oriented or control group for the duration of the six week intervention. The results showed that higher level children had significantly higher book concepts scores than children whose initial skills were lower when they had been in the performance oriented rather than control group. In contrast, lower level children did better on this task when they were in the dialogic group, and also had higher expressive vocabulary scores when they were in the dialogic rather than control group. Overall, children benefited most from an adult style that matched their ability, rather than just the quantity of interaction received.

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...[C]hildren are, by virtue of being human, deeply involved in social contexts- in social interaction with others, observation of others, and use of socio-cultural tools, skills and perspectives. (Rogoff, (1990), p208).

Perhaps the most important socio-cultural tool and skill a child can have in Western society is literacy, a skill that can not be learnt except through social interaction. Consequently, the image of an adult and child engaged in shared book reading is a common one in today's society as even television bombards us with images such as a tough New York detective reading to his child in NYPD Blue. In short, it is widely accepted that children should be read to and that reading to children will benefit their literacy skills. Exactly what benefits preschool children receive from adults reading books to them, however, are not well defined and are currently being investigated by research focusing on emergent literacy skills.

Emergent literacy refers to the knowledge children have about literacy prior to schooling when they are formally taught how to read and write. This includes knowledge about the conventions of print, letter identification, vocabulary skills, and narrative ability as well as an awareness of the conventions and purpose of book reading. All of these skills are learnt through interactions such as joint book reading (Bus, van IJzendoorn & Pelligrini, 1995; Nelson, 1996; Scarborough & Dobrich, 1994; Wells, 1985; Whitehurst & Lonigan, 1998).

There is, however, some debate about the extent of the effect shared book reading has on these skills. It has been argued that shared book reading accounts for only eight percent of the variance in achievement measures amongst pre-schoolers (Bus, van IJzendoorn & Pelligrini, 1995; Scarborough & Dobrich, 1994). Furthermore, this effect decreases in strength as children become more accomplished at reading (Bus, van IJzendoorn & Pelligrini, 1995). Whitehurst and Lonigan

(1998), however, argue that shared book reading in the home and at preschool has many beneficial effects on literacy skills and advocate the use of book reading interventions that boost children's emergent literacy skills, viewing emergent literacy as an important factor in later school achievement. Nelson (1996) also argues that stories or narratives are an important means of communication and that familiarity with story telling or hearing stories is likely to aid children's narrative skills.

A longitudinal study by Reese, Haden and Fivush (1998), for example, indicates that at age eight, story comprehension can be predicted by children's preschool experience with joint book reading. Likewise Wells (1985) found differences in achievement during the early years of schooling could be attributed to differences in knowledge of literacy on entry into schooling. Wells took samples throughout the day from 32 children at 3 month intervals while the children were aged between 15 and 42 months old. These samples were coded for the presence of four activities: looking at printed material, engaging in joint book reading, drawing or colouring, and writing. Follow up measures consisted of a knowledge of literacy test at five years and a reading comprehension test administered when the children were seven. The frequency of joint book reading was the only task that was significantly associated with both follow up measures. Thus, it would seem that shared book reading may be a useful means of teaching children skills that are beneficial to them when they start schooling.

Theories of emergent literacy

Rogoff (1990) believes these benefits arise as the child learns both directly and indirectly about literacy from the adult. Rogoff likens this type of learning to the sort of learning an apprentice receives from a more experienced master. Thus, the apprentice or child observes the master or adult engage in literacy based activities, and learns from the

experience. Furthermore, the master involves the apprentice in the task, encouraging the apprentice to participate in the activity by giving them tasks that fall within the realms of their ability and, once the task is mastered, increasing the apprentice's level of participation, until the apprentice is capable of undertaking the entire activity with minimal or no supervision. In a book reading situation, for example, the adult may engage the child by asking them to turn pages or label pictures, but as the child becomes proficient at this, the adult may require the child to identify characters by name or read simple words, until eventually the child can read the book alone.

Rogoff's (1990) view of learning is similar to that of Vygotsky (1978), who believed that a child's capabilities are more accurately reflected by what that child can achieve with expert assistance, or scaffolding, rather than what the child can do alone. Vygotsky (1978) referred to the difference between a child's actual and potential abilities as the zone of proximal development or ZPD, and argued that any scaffolding adults provide should be consistent with the child's abilities. This means that if the assistance provided to the child falls within the realms of what the child can do unassisted, or is considerably beyond the upper limits of the child's ability, thus falling outside the child's ZPD, then it will not be of any benefit to the child.

This concept is particularly important to note when children's literacy is being considered. A preliterate child, for example, will not benefit from a story unless it is read to them, because they cannot understand the written words unless they are read aloud. If, however, the words in the book are beyond the child's comprehension when read aloud, then the book reading cannot be expected to be of any benefit to the child. Consequently, for book reading to be beneficial, both the style of the reader and the level of the book must match the ZPD of the child being read to. Ninio (1980), for example, found that

when there was a poor match between maternal reading style and children's ability, children showed language delays relative to those children whose mothers' reading style was a good match with their abilities.

Shared book reading in the home and preschool

It is therefore important to note that it may not be reading to children *per se* that is beneficial, but how children are read to that has beneficial effects on their literacy related abilities. Shared book reading in the home has been correlated with an increase in the language abilities of the child being read to (Ninio, 1980; Sénéchal, Thomas & Monker, 1995; Whitehurst et al, 1988; 1990) as has book reading in preschools (Dickinson & Smith, 1994; Phillips, Norris, Mason & Kerr, 1990, Sénéchal, 1997; Sénéchal & Cornell, 1993; Valdez-Menchaca & Whitehurst, 1992). More specifically, however, different styles of reading result in different outcomes for language and literacy skills. A focus on reading the story and discussing it after the reading, for example, is associated with gains in receptive vocabulary (Dickinson & Smith, 1994), while stopping during the reading to talk about the story leads to an increase in the number of labelling and evaluative comments made by the child (Harkins, 1992). Although differences in adult reading style have different associations with children's language abilities, there is also some evidence to suggest that these differences also affect how the child interacts with the reader during the story (Dickinson & Smith, 1994; Harkins, 1992; Haden, Reese & Fivush, 1996; McNaughton, 1995; Ninio, 1980).

McNaughton (1995) found differences in adult reading styles that seem to be based more on the type, rather than the frequency of the interactions. The majority of interactions used by middle class Europeans were designed to construct comprehension of the story with the child. In contrast, other cultures used a performance routine with

children, which involved the children learning to recite the text by repeating what the adult had read. This indicates that there are noticeable variations in the styles adults use when reading to children. Differences in adult reading style have also been found to occur between different socio-economic groups (Ninio, 1980). Although these variations may arise through different cultural or social values placed on book reading, book reading styles vary within homogenous groups as well.

Harkins (1992), who studied reading styles in the homes of English speaking middle class families, observed that mothers either frequently interrupted the story to discuss it with their children or read with very few interruptions. An increase in verbal activity was found among children whose mothers frequently interrupted the story reading, in comparison to those children whose mothers did not interrupt the story (Harkins, 1992). These differences in style seemed to reflect different goals of story telling and are likely to have different implications for children's later literacy skills.

Haden et al. (1996), for example, identified three distinct styles of story telling in a group of white, middle class mothers. Mothers could be defined as using collaborative, descriptive or comprehension based styles. Mothers who used a collaborative style seemed intent on the child interacting with them in constructing understanding of the text and frequently reinforced the child's comments. Mothers who used a descriptive strategy, however, tended to focus on labelling items, while comprehender style mothers placed their emphasis on print concepts and the act of reading as well as asking abstract questions. Overall, children whose mothers read to them in the collaborator and comprehender styles tended to do better on later measures of literacy, such as story comprehension, receptive vocabulary and word

recognition, despite the fact that children read to in the describer style made more extra-textual comments.

The variable patterns of adult reading style in the home are also reflected by pre-school teachers, whose reading styles share many features with those observed in the home. Dickinson and Smith (1994) found that in 25 classrooms, reading styles of pre-school teachers could be divided into three categories: performance oriented, co-constructive and didactic-interactional. The performance oriented style emphasised a dramatic style of reading, with few interruptions and an analytic discussion at the end of the reading, similar to the maternal style observed by Harkins (1992). Co-constructive styles tended to promote analytic talk during the book reading, while the didactic-interactional style emphasised the children's recall of the text by getting them to read along with the teacher. Typically, books read in such classrooms contained simple vocabulary and a simple plot, presumably making it easier for the children to join in with the reading. Children in classrooms where analytical discussion occurred had better receptive vocabulary scores than did children in the didactic-interactional classes. This finding indicates that observed differences in the teachers' style of reading may result in differential outcomes for children's literacy skills.

In particular, the vocabulary gains shown by children receiving a particular style of adult reading may have implications for later literacy skills. It has been demonstrated that children with a low initial vocabulary tend to learn new vocabulary during book reading sessions at a lower rate than children with a high initial vocabulary (Sénéchal et al., 1995). This finding is similar to findings by Stanovich (1986) which indicate that children who are poor readers remain so throughout their school career and that their skills may, in fact, deteriorate as such children do not have the skills required to improve their capabilities.

As a result, differences between children with high and lower skill levels increase considerably over time. Thus it is important to study the effects of reading style to determine which attributes of a reader's style have positive effects on children's literacy skills.

The effects of adult book reading style on emergent literacy

It has been shown, for example, that when children have the opportunity to respond to questions during book reading, rather than listening passively, they are more likely to understand novel words from the story, indicating an increase in their receptive vocabulary (Sénéchal et al., 1995). Furthermore, even minor participation by the child, such as pointing to pictures, leads to an increase in the comprehension of novel words, relative to children who listen passively. It is, however, important to note that this finding may be context dependent. That is, active participation by the child during the book reading may not benefit receptive vocabulary when the context of the book is sufficient to allow incidental learning of new words (Sénéchal & Cornell, 1993). Furthermore, when children listen passively to multiple readings of a book, they show greater receptive vocabulary gains than when they are only exposed to a single reading (Sénéchal, 1997). It is, however, important to distinguish between receptive and expressive vocabulary and note that different styles of reading may benefit one more so than the other. Consequently, while multiple readings of a book may benefit children's receptive vocabulary, adult/child interaction that focuses on the target words during those readings is more beneficial to children's expressive vocabulary than their receptive vocabulary (Sénéchal, 1997; Sénéchal et al., 1995). That is, children who are given the opportunity to interact with the adult during the reading learn to produce as well as comprehend target words, relative to children who listen passively during the reading. Thus it would seem that not only does reading to

children affect vocabulary, but different aspects of vocabulary are affected by different reading styles.

Emergent literacy does, however, consist of more than just vocabulary skills. Children's awareness of print and book reading conventions may be just as important for predicting later literacy success as their vocabulary skills. Consequently, we also need to know if and how adult book reading style affects these skills. There is some evidence that shared book reading can enhance emergent literacy skills other than vocabulary when using Little Books, which are very simple, consisting of only 6-9 pages each, with one simple sentence per page (Mason et al., 1990). In a twenty four week intervention, kindergarten children who were read Little Books, either by their parents, teachers or by both did significantly better on an Emergent Literacy Concepts Test (ELC) than children in the control group, who did not receive the Little Books (Phillips, et al., 1990). The ELC measures print concepts and consists of tasks such as asking children to find the front of a book or define words and has two forms. The second, which was used in post-testing, differs from the first in that it required children to read words that were in the Little Books. As all children who participated in the shared book reading showed significant increases in their ELC scores, this study indicates that a variety of emergent literacy skills can be learnt through shared book reading.

In another Little Books intervention, teachers were encouraged to use Little Books for one year as a part of classroom activity or, did not use Little Books at all. Children in the intervention condition were significantly better at naming letters than children in the control condition by the end of the intervention (Mason, Kerr, Sinha & McCormick, 1990). Furthermore, letter knowledge affected measures of print concepts and writing, indicating that the Little Books intervention had a positive effect on emergent literacy skills. Both

interventions took place with children who were in academically at risk kindergartens.

Although shared book reading did have beneficial effects for these at risk children, Little Books are specifically designed to benefit emergent literacy skills. Furthermore, the quality of the adults' book reading style was not taken into account in these interventions. Consequently, it is important to know how shared book reading benefits print and letter naming skills in interventions that use more typical story books and how children's initial skill level interacts with adult book reading style to produce beneficial effects.

There is some evidence that quality of adult book reading style is quite important. Reese and Cox (1999) studied the effects of adult style on 48 children who were four years old, during a six week intervention in kindergartens. They used three styles: Performance Oriented, Describer and Comprehender, each with five fixed comments and questions per book. The performance oriented style was based on that found by Dickinson and Smith (1994), and did not interrupt the story, but discussed it at the beginning and end of the reading. The describer style focused on making comments or asking questions about the pictures, while insertions in the comprehender style of reading focused on aiding the children's understanding of the story. The level of questions and comments made in the performance oriented style was similar to those made in the comprehender style. The children were individually read a total of 32 stories in the style they were assigned to and were pre- and post-tested on a variety of literacy related measures.

Children with good vocabularies showed a greater increase at post-testing if they had been in the performance oriented group, whereas children whose initial vocabularies were lower benefited most from being in the describer group. Children who had higher story comprehension skills in pre-testing showed greater gains in their print

skills when they were read to in the describer style, while children who were read to in the performance oriented style showed greater gains in their print skills if their initial comprehension skills were lower .

These results indicate that shared book reading has beneficial effects on children's literacy skills, even using regular story books in an average kindergarten. More importantly, however, it indicates that adult reading style interacts with children's initial skill level to produce these beneficial effects. Thus, it seems that the quality of adult book reading is important.

Dialogic reading

Recently, however, it has been argued that a high quantity of adult/child interaction during the book reading is the most important factor in determining a quality reading style for adults (Arnold, Lonigan, Whitehurst & Epstein, 1994; Valdez-Menchaca & Whitehurst, 1992; Whitehurst et al., 1988; 1994). Research conducted by Whitehurst and colleagues (Valdez-Menchaca & Whitehurst, 1992; Whitehurst et al., 1988; 1994) indicates the benefits of a very interactive reading style, called dialogic reading. This style emphasises the use of open-ended questions and expansion of the children's responses during the reading of the story. Evidence suggests that this style has beneficial effects on literacy related skills, in older children who are part of Head Start programs, as well as young children from middle SES families and Mexican low SES families (Arnold, et al., 1994; Valdez-Menchaca & Whitehurst, 1992; Whitehurst et al., 1988; 1994).

The 20 Mexican children studied by Valdez-Menchaca and Whitehurst (1992) were aged between 27 and 30 months at the time of the intervention and were all Spanish speakers. All children were pretested on measures of both receptive and expressive vocabulary as well as a developmental screening test. Although this indicated that the children were developing normally, all of their vocabulary test

scores were below what would be expected of an average child. Half of the children received one on one reading with an adult trained to read in the dialogic reading style. The control group children received an equal amount of one on one time with the adult but were engaged in arts and crafts projects during this time. The intervention lasted approximately six weeks, during which time teachers read a set of five books in the dialogic style, by asking questions and expanding children's answers about the book, without actually reading the text verbatim (Valdez-Menchaca & Whitehurst, 1992). Children in the experimental group scored significantly higher on measures of both receptive and expressive vocabulary than children in the control group, with greatest gains being made for expressive vocabulary. Interestingly, expressive vocabulary was not measured until two months after the intervention phase, indicating that dialogic reading with two year olds may have long term benefits for this aspect of their vocabulary.

While this intervention was done in a Mexican day care centre, Whitehurst and colleagues (1988) have also studied the effects of dialogic reading in the home. Twenty-nine middle class American children and their parents participated in a month long dialogic reading intervention when the children were between 21 and 35 months old. Once again, children were tested on both their receptive and expressive vocabulary and all children fell within the normal range of scores for their age. Half the parents were trained to read in the dialogic style while the remaining parents were instructed to continue reading as they always did. At the end of the intervention, children in the experimental group had significantly better scores on a measure of expressive vocabulary than the control group children. At a nine month follow up, children in the experimental group still had, on average, higher expressive vocabulary scores than children in the

control group, although this finding was only marginally significant (Whitehurst et al., 1988).

Furthermore, a later study (Arnold et al., 1994), using a demographically similar group, also found that two year old children performed better on measures of expressive vocabulary, even if their parents had been trained to read in the dialogic style via videotape. In fact, children of parents who had been trained to read in the dialogic style by video actually performed better than children whose parents had been trained by an experimenter. This indicates that not only does dialogic reading benefit young children's expressive vocabulary, but that it is a technique that at least middle class parents find easy to learn. Expressive vocabulary, however, is only one aspect of emergent literacy skills, and it is important to consider how dialogic reading affects other skills, such as print concepts.

In a study of 167 four year olds, dialogic reading was introduced as part of the daily program at the Head Start centres the children attended, and print skills were measured as part of the experiment (Whitehurst et al., 1994). Pretesting consisted of measures of both receptive and expressive vocabulary as well as the Developing Skills Checklist (DSC) which measures aspects of emergent literacy such as letter recognition. Eight classrooms participated in the experimental condition, while seven were in the control condition. Children in the control classrooms received the normal Head Start program, while children in the experimental classes received group reading sessions three to five times a week. These children were read to by adults trained in the dialogic style and their parents were also trained to read in this style, so that the children could receive one on one dialogic reading in the home. This training occurred once at the start of the school year. The intervention lasted an entire school year after which children were tested on a variety of literacy skills. Children in the

intervention condition performed better than the control children on print concepts and writing measures (Whitehurst et al., 1994).

Interestingly, effects for language abilities were only found when children's primary care givers had participated in the intervention. Furthermore, the intervention included the addition of a phonemic awareness program, which may have affected results.

It is also important to note that, although the dialogic style has been tested on a wide cross section of children, all of them were quite low language level children. That is, the children from middle-class families and Mexico were all under the age of three years old and thus, although their language skills may have been normal for their age, they were still low relative to the language capabilities of an average four year old. Although the children in the Head Start program that Whitehurst et al., (1994), tested were older, their language levels were delayed for their age. Thus, it is possible that the dialogic reading style may primarily be beneficial for children with low-level language abilities.

This style of reading has not, however, been tested in comparison to other adult reading styles. Furthermore, dialogic reading has become a widely endorsed method of reading to children in the United States, with training manuals and videos available to both parents and teachers alike. When this material is studied, however, it is evident that dialogic reading does target children with lower level language skills, as most of the interactions encouraged focus on low order literacy skills. That is, parents are encouraged to ask questions that require the children to label or describe pictures in the books, with less emphasis on the meaning of the text.

Despite this, it is important to note that dialogic reading results in a higher level of active interaction by the child during book reading. Consequently, it is possible that the dialogic style increases the number

of comments made by children and that this greater input from the child means that adults can be more effective at scaffolding, since they are receiving more feedback from the child. It also means that the child may be more likely to benefit from the reading, as the well scaffolded interactions dialogic reading provides create a zone of proximal development, within which the children can establish and increase their skill base.

High levels of interaction during the actual book reading, however, may only affect some aspects of language development and do not necessarily lead to increased story comprehension (Haden et al., 1996). That is, although it has been shown that active interaction can lead to greater language gains than passive listening, this is not always the case (Sénéchal & Cornell, 1993; Sénéchal, et al., 1995). When the story provides ample scaffolding without extra input, children make greater gains when they simply listen to the story without interruption (Sénéchal & Cornell, 1993). Furthermore, it was also found that the child's initial literacy abilities influenced the extent of their gains (Sénéchal et al., 1995). Thus, the benefits children gain from dialogic reading may result from the quantity of interaction which, in turn, may be ineffective if it is of a lower level than the children's skill base. Given the importance of tailoring interaction to the child's skill level, older children with good literacy skills may not benefit from a dialogic reading style to the extent that children in Whitehurst and colleagues' (1994) study did.

The present experiment

In order to test this hypothesis, a direct comparison of dialogic reading with a different adult reading style is proposed. As the dialogic style involves considerable interruption of the text, comparing its effects with those of a less interruptive style that requires high order discussion of the book, rather than the more descriptive interactions

produced by dialogic reading, may yield interesting results. In their observational study, Dickinson and Smith (1994) describe an adult reading style called performance oriented reading which meets the above criteria. The performance oriented style of reading is also suitable for repeat readings of a book, as well as reading to a group of children, which is important as the dialogic style has only minimal results when used to read to groups of children (Whitehurst et al., 1994). This, and the fact that previous research using this reading style indicates it may be more appropriate for children with good literacy skills (Reese & Cox, 1999), makes the performance oriented style of reading appropriate for comparing with dialogic reading. Given the importance of tailoring the adult's style to the child's abilities, it is possible that both performance oriented and dialogic styles positively affect children's literacy abilities, but that such an effect is dependent on the child's initial language level. Specifically, it is expected that children with lower initial emergent literacy skills will benefit most from the dialogic style whereas children with higher initial skills will benefit more from the performance oriented style of reading.

The present experiment involved a six week intervention with four year old children, who were read to by trained experimenters in either the performance oriented or dialogic reading styles. A further group of children were pre- and post-tested but not read to as they formed the control group. Testing included measures of both vocabulary and other emergent literacy skills such as book awareness and story retelling ability. In addition to the adult reading styles affecting children's emergent literacy skills, it is also important to note that this study is a move towards more naturalistic literacy based interventions in children's pre-schools. Previously, classroom based experiments have used a one-on-one intervention with children, or have been less effective when targeting groups of children (see Reese &

Cox, 1999; Whitehurst et al., 1994; for examples). This experiment is an attempt to find out if children can actually benefit from shared book reading in groups as this is a frequent context both in kindergarten and formal schooling and consequently, is a move towards making experimental work more applicable.

Four year olds were targeted in this experiment because they enter formal schooling when they are five and consequently may benefit most from extra exposure to literacy just prior to beginning school. Furthermore, these children fall within the age range of children in dialogic reading interventions done by Whitehurst and colleagues (1988; 1992; 1994), and thus can replicate and extend findings on the effectiveness of dialogic reading.

By comparing dialogic reading with performance oriented reading, it will also be possible to determine whether or not children with relatively high language abilities would benefit from the high level of interaction dialogic reading provides or if quality of interaction is important as children become more skilled. Based on previous findings (Reese & Cox, 1999) it is hypothesised that the more demanding and less interruptive performance oriented style will benefit the vocabulary of children with an initially high vocabulary the most. In accord with Whitehurst and colleagues' (1988; 1992; 1994) findings, however, it is expected that dialogic reading will have the greatest benefits for children with initially lower vocabulary skills.

Predictions about how the different styles will affect children's story retelling skills are, however, less clear. Although both styles involve retelling the story without reading the text, in performance oriented reading the retelling is structured by the experimenter and focuses on relating the story to the children's lives as well as discussing the motivation and emotion of characters. As there is some evidence that young children process narratives from books in terms of their

own experiences (see Nelson, 1996), this aspect of performance oriented reading may benefit younger, less capable children's retelling skills. That is, providing expert assistance in relating the book back to children's lives may make the story more memorable because it helps children interpret stories in terms of their own experience, thus providing them with a frame of reference. Furthermore, the styles differ in the placing of comments, with comments in the dialogic style interrupting the text. Thus, the performance oriented style may generally be more beneficial to children's story retelling skills when their initial ability is lower, because the story line is not interrupted and the retelling is well structured by the experimenter.

The dialogic reading style, however, was implemented in such a way that it made high demands on children's story retelling skills. That is, previous criticisms of Dialogic reading have included the fact that too few open-ended questions were asked when teachers used this style with four year olds (Whitehurst et al., 1994). When Dialogic reading was used with two year olds, however, readers used open-ended questions on every page (Valdez-Menchaca & Whitehurst, 1992), and the present experiment also did this during one reading of the story. Consequently, this style placed the emphasis solely on the children's recall during the retelling of the story, by simply going through the book and asking the children about what happened on every page. Furthermore, Cox (1997) found that the simpler describer style, which is similar to dialogic reading, was most beneficial for children's retelling ability when their initial ability was high. Consequently, this style may benefit the story retelling skills of children when their initial ability is high, or the retelling aspect of dialogic reading may be too demanding and this style may not benefit children's story retelling skills at all.

As neither reading style specifically targeted children's print skills, it was expected that the additional exposure to print that children in experimental groups receive will benefit their print skills relative to children in the control condition. Overall, however, children in the control condition are expected to show intermediate gains in their post-test results as they remain in literacy rich environments. That is, although control group children do not receive any additional reading, they remain in the kindergarten, and consequently benefit from the day to day opportunities to learn about literacy that children who are having time out from the curriculum to engage in the intervention may not receive as much of.

Method

Participants

There were 63 children in the present study, 35 of whom were boys and 28 of whom were girls, but two girls were excluded after pretesting because English was their second language. Three boys were later withdrawn from the study due to their unwillingness to participate. All three had been assigned to the Performance oriented group. Consequently, there were 58 participants in the present study, who were aged between 47 and 57 months at the start of the experiment, with a mean age of 52.65 months. All of the participants were recruited through three state kindergartens, as recommended to the researchers by the Kindergarten Association. The kindergartens were Kelsey Yaralla, Helen Deem and Richard Hudson, all in Dunedin, New Zealand. Twenty two of the participants came from Kelsey Yaralla, 18 from Helen Deem and 18 from Richard Hudson. Letters explaining the study were left at the kindergarten for parents to read, although only children who were between 47 and 57 months were invited to participate. Only children whose parents gave informed consent participated in the study, and children who were reluctant to participate were withdrawn from the study as parents or researchers saw fit. The intervention phase as well as both testing phases of the experiment were completed during one term at the participant's kindergarten by three female researchers. Due to time constraints on the testing, however, one child was pretested in the home and two children were post-tested at their homes.

Towards the end of the intervention phase, care givers were sent questionnaires regarding demographic information about themselves and their children. The return rate was 84 percent with demographic information available for 16 children from the Performance oriented

group, 18 of the children in Dialogic group and 15 children from the control group. Eighty percent of the children were of European descent only, ten percent of children were of both Māori and European descent and six percent of children were of Māori descent only. One child was of European and Indian descent.

Table 1.

Ethnic distribution by experimental group

| Ethnicity | Performance O (n=16) | Dialogic (n=18) | Control (n=15) |
|-------------|-------------------------|--------------------|-------------------|
| European | 12 | 15 | 12 |
| Māori-Euro. | 2 | 1 | 2 |
| Māori | 1 | 1 | 1 |
| Other | 1 | 0 | 0 |

Of the 49 replies, 38 provided information about both the child's parents, ten provided information about the child's mother only and one provided parental information only. English was the primary language spoken in all of the homes, although two children in the Performance oriented group had one parent whose native language was other than English. Of the respondents with children in the Performance oriented group, fifty percent of mothers, as well as one child's father, had some high school education, while the remaining forty four percent of mothers had some level of tertiary education. Thirty eight percent of respondents did not work outside the home while twenty five percent were in full time work and thirty seven percent were in part time work. Thirty five percent of mothers with children in the Dialogic group had some high school education, while sixty five percent had some tertiary education. One mother chose not to provide such information. Five (27 percent) of the mothers did not work outside the home, 11 (61 percent) were in part time work, while two were in full time work. Forty six percent of mothers with children

in the control group had some high school education while fifty four percent of mothers had some tertiary education. Forty percent of mothers did not work outside the home, thirty three percent were in full time work and twenty seven percent did part time work. A five point scale was used to further analyse maternal education levels, with one being assigned to mothers who had not completed any university entrance level high school and a two assigned to those who had. Mothers with a trade were assigned a three, while those with a university degree or diploma of teaching were assigned a four and those with a postgraduate degree a five.

Materials

Overall, 30 books were used in the intervention phase of the study, with 17 of those being readily available in New Zealand (see Appendix A for book titles). The remaining 13 books were less common and were recommended for use by The Stony Brook Reading and Literacy Project's (n.d.) Dialogic Reading Handbook. All books had a narrative structure as the Performance oriented style, in particular, is best used for reading such books. Some of the books were older titles (eg *Where the wild things are*, (Sendak, 1963)), whereas others were relatively recent (eg. *Dear Bear*, (Harrison, 1994)). Tape recorders and audio tapes were also used to record the story reading sessions in the intervention phase, as well as some of the tasks done in pre- and post-testing.

Procedure

Pretesting As the present experiment was trying to determine the relative effects of different adult reading styles on children's literacy skills, a variety of these skills were measured. Both receptive and expressive vocabulary were measured, as were children's print skills and story skills, in order to assess which skills particular reading styles benefited most.

a) Receptive vocabulary The PPVT-III (Dunn & Dunn, 1997), form A, was administered first as a measure of receptive vocabulary. This involved presenting the children with four black and white line drawings on a page and asking them to place their finger on the picture corresponding with a label the experimenter provided. Once this was done, the page was turned and the process repeated. Pages were divided into sets of 12 and children were required to get 11 or more correct out of a set to establish a basal. A ceiling was established when eight or more incorrect answers were given in a particular set. Children's language age was used as the final score.

b) Book concepts skills¹ The next task was a book concepts task, adapted from Clay, (1979). This task consisted of ten questions, with each correct answer worth one point. Questions targeted children's knowledge about books and how they are read, as well as their knowledge about print. Children's book concepts score was used as their final score. This task was followed either by a short break if the child was restless or by the EVT (Williams, 1997). If children were restless, the experimenter distracted them by showing them the sticker they would receive after testing or, if necessary, taking them out of the testing room for a brief time. These breaks were never longer than five minutes.

c) Expressive vocabulary Expressive vocabulary was measured by the EVT (Williams, 1997). This involved children looking at coloured pictures and being asked to name the picture. A basal was achieved when children gave five consecutive correct answers. As the task is designed to be appropriate for a wide range of ages, however, children progressed from simply naming pictures (appropriate for four year olds), to being told the name of a picture and being asked for a synonym (appropriate for ages five and older). Five consecutive

¹ Children were given two additional tasks prior to this task ; an environmental print task and a decoding task, but neither of these were used in the analyses.

incorrect answers were required for the task to reach ceiling. Children's language age was used as the final score.

d) Story skills After the EVT, experimenters read children *The snowy day* (Keats, 1962). The reading was interspersed with 14 story comprehension questions, asked at specified points in the text (see Appendix B). After reading, a Winnie-the-Pooh puppet was introduced and the children were asked to retell the story to it. The experimenter read the title, opened the book to the first page and turned pages for the child. Experimenters also gave a maximum of two prompts per open page, the first being "What's happening here?" and the second being "What else?". Children were praised for their efforts as the experimenter saw necessary. These tasks were audio taped and transcribed for later scoring. Twenty five percent of the transcripts for each test were coded by two independent coders, with a reliability of $\kappa=.86$ for the story comprehension. The story retelling task was coded for the presence of non-pictured information in children's transcripts and again, 25% of the transcripts were coded by two independent coders. Non-pictured information refers to clauses which contain information not available in the illustrations, such as the name of a character or temporal ordering (De Temple & Tabors, personal communication). A reliability of $\kappa=.82$ was obtained for the story retelling task. After pretesting, each child was given a sticker as a reward for their participation.

Intervention A fourth experimenter marked the pre-tests and randomly assigned children to intervention conditions after matching for gender, PPVT-III, and EVT scores, as well as the difference between the two language measures and the direction of that difference. Eighteen children were assigned to the Performance oriented reading condition and 20 to the Dialogic reading condition. The 20 remaining children were assigned to a control condition.

Table 2.

Group distribution by child and gender.

| Gender | Performance O | Dialogic | Control |
|--------|---------------|----------|---------|
| Female | 8 | 10 | 8 |
| Male | 10 | 10 | 12 |

Once children were assigned to an experimental condition, children in each condition were divided into groups of between three and five, with each group representing a range of initial language skills, resulting in a total of 12 reading groups. The intervention phase consisted of reading to the children in one of two experimental styles, Performance oriented or Dialogic (see Appendix C for a sample of style protocols). The children in the control condition were not read to by the experimenters at all. During the intervention phase, reading occurred at the kindergarten every school day for six weeks, with each group being read to for approximately 20 minutes a day. One day was missed as a result of a public holiday, and in weeks five and six of the intervention, Wednesdays were used to give catch-up readings to children who had been absent. Each group in an experimental condition was read a total of 27 of the 30 available books with an average of three readings per session. In both styles, each book was read twice and reconstructed once. The same three researchers who pre-tested the children also did the intervention phase of the experiment, but each at a different kindergarten from pretesting to ensure that readers were blind to the pre-test status of the children.

Each book in the intervention phase had a written protocol of comments for the readers to say, as well as a set number of responses for the readers to make in response to the children's elicited comments. In both styles, these responses by the readers were coded on line with a tally sheet and children received an average of 30 requests

and 42 provisions of information per book. Some of these provisions were confirmation of comments made by the children. Unelicited comments by the children were responded to in both styles by turning the question back to the child or briefly affirming the child's comment. In the Performance oriented style, there were on average 52 scripted comments to be made over the three readings of each book, with 22 of those being provisions of information, and 30 being requests for information. In the Performance oriented style, readers responded to children's elicited comments 20 times on average per book and did so by praising the child's response or repeating it, both of which counted as provisions of information. In the Dialogic style, there were 35 scripted comments on average per book, to be used over the three readings, with five provides and 30 requests. In this style, readers had an additional 37 responses per book to children's elicited comments over the three readings, all of which were provisions of information. These responses were praising the child's comment or evaluating it, repeating it and then expanding it (see Appendix D for examples of unscripted responses to children's elicited comments).

The styles first differed in the level of the comments made, with a higher percentage of higher level comments made in the Performance oriented condition. This reading style was based on Dickinson and Smith's (1994) Performance oriented reading style and thus comments were modelled after the type of questions they observed among preschool teachers. Higher level comments included inferences about the story line and characters, predictions about the story line, word definitions and evaluations of the book or characters in the book as well as questions that related the story to children's personal experience. A higher percentage of these higher level questions were asked in the Performance oriented style. Although questions that related the book to children's personal experience were also asked in

the Dialogic style, this style consisted of a high proportion of open-ended questions, such as "What is happening here?". The Dialogic style was modelled on Whitehurst et al's (1994) study of a Dialogic reading intervention, which included some higher level comments.

Whitehurst et al (1994) did, however, note that the frequency of higher level and open-ended questions was quite low and thus may have compromised the effectiveness of the intervention. Consequently, the present study aimed to implement the Dialogic style in a more theoretical way than had previously been practised. The style, however, still consisted predominantly of lower level comments in comparison to the Performance oriented style. These comments included waiting for the children to complete a phrase, asking recall questions, asking them to label objects, labelling objects for them, as well as repeating, expanding and evaluating children's comments.

This meant that children's comments were sometimes corrected explicitly in the Dialogic style whereas incorrect comments in the Performance oriented style were not responded to directly. In the Performance oriented style, some of the scripted comments provided correct answers to scripted questions, and thus children's incorrect answers were responded to with a scripted answer or by the experimenter praising the correct answer of another child.

Lastly, the styles differed in the placing of the scripted comments. Most comments in the Dialogic style occurred at the beginning and end of the first reading of the book or, were interspersed during the second reading of the story. Open ended questions were only asked in the final reading of books in the Dialogic style, which involved the children retelling the story to the experimenter, without the experimenter providing any of the text. This strategy was used because Dialogic reading aims to have the child become increasingly involved with the book over multiple readings. In contrast, comments in the

Performance oriented style occurred either at the beginning and end of readings one and three, or during the story reconstruction that occurred straight after the first reading of the story. The text was never interrupted by the reader in this style, as it was not read during the reconstruction. This was because Performance oriented reading focused on consolidating children's understanding of the meaning of the text.

A fidelity check of the reading sessions indicated that readers missed fewer than one percent of scripted comments for both of the styles. In the Performance oriented style, readers averaged 19.56 unscripted comments per book, slightly less than the prescribed 20. Readers also made an average of 2.8 additional comments and asked an average of 1.33 additional questions per book of children they read to in this style. In the Dialogic style, readers made an average of 37.42 unscripted comments per book, which was considerably higher than the prescribed 30 comments which were to be made in the repeat, evaluate and expand sequence. Readers also praised children an average 13.48 times per book in this style, which was also higher than the prescribed seven times per book. In addition to this, children were asked an average of 2.3 unscripted questions and experimenters made an average of 2.7 extra comments to children.

Post-testing After the intervention phase, all children were post-tested in their kindergarten, by an experimenter blind to their experimental condition and pre-test results. Post-tests were the PPVT-III (Dunn & Dunn, 1997), form B, followed by the environmental print, letter and word recognition, and print skills tasks that were used in the pre-test. Children were also retested on the EVT (Williams, 1997), and did another story comprehension and story retelling task, although this time the story was *Peter's chair* (Keats, 1967). These tasks were also audio taped for later transcribing and scoring and again, two independent coders marked 25% of each test to get a reliability of

kappa=.85 for story comprehension and a reliability of kappa=.81 for the story retelling task. Once post-testing was complete, all children were given a small gift to thank them for their participation.

Results

Of the 58 children in the study, two children (one boy and one girl) did not attend kindergarten often enough during the intervention to be included in the study so their data was excluded from the analysis. Both children were in the Dialogic group although they came from different kindergartens. There was some missing data for four of remaining 56 children. One control group child's pretest story comprehension and retelling data was missing due to the fact that the recording was unintelligible and three children, two from the Dialogic and one from the control group, were missing post-test story comprehension and retelling data due to tape recorder malfunctions. Group means for those variables were used to replace these scores. All pretest and post-test scores were checked for skewness, but all were normal.

Preliminary analyses

Analyses of variance were used to determine whether or not there were any pre-existing differences in pretest scores by children's gender experimental group or maternal education level. There were gender differences in children's scores for the EVT with girls performing, on average, better than boys ($F(1,54) = 5.27, p < .05$). There were not any significant differences in children's pretest scores by experimental group (see Table 3). Children did, however, perform differently on some of the pretest measures as a function of maternal education. Specifically, children performed better on the PPVT-III ($F(4,41) = 7.06, p < .01$) and the book concepts awareness task ($F(4,41) = 2.98, p < .05$) as their mother's level of education increased.

Further analyses on the post-test scores, using the pretest variables as covariates, showed that there were no effects of maternal education as a function of reading style. The lack of an interaction effect indicates that children did not respond differently to the

intervention as a function of their mothers' education level (see Table 3). In order to determine the extent to which the five pretest variables used in the main analysis measured different skills, Pearson correlations were calculated between those variables.

Table 3

Pretest and adjusted post-test means by experimental group

| Variable | <u>Performance oriented</u> | | <u>Dialogic</u> | | <u>Control</u> | |
|---------------|-----------------------------|-----------------|------------------|-----------------|------------------|-----------------|
| | Pre | Post | Pre | Post | Pre | Post |
| PPVT (SD) | 55.17 (15.03) | 64.94 (9.04) | 56.89 (15.17) | 65.75 (9.60) | 56.30 (11.44) | 53.68 (8.77) |
| EVT (SD) | 54.72 (11.50) | 60.24 (7.12) | 57.50 (11.95) | 70.90 (7.75) | 57.25 (11.64) | 53.93 (6.91) |
| NP (SD) | 7.94 (3.26) | 15.14 (5.81) | 8.56 (5.53) | 13.39 (6.17) | 11.52 (7.23) | 15.64 (5.64) |
| BK (SD) | 5.44 (1.72) | 7.22 (1.46) | 5.33 (2.33) | 4.98 (1.52) | 4.95 (1.57) | 5.41 (1.38) |
| Comp. (SD) | 4.02 (2.09) | 5.65 (2.29) | 4.72 (2.95) | 9.11 (2.43) | 4.52 (2.40) | 6.04 (2.22) |

Note: Post-test means are adjusted for pretest scores and pretest by group interaction scores.

As Table 4 shows, both vocabulary measures correlated with all other pretest scores and the only tests that did not correlate were the book concepts and story retelling measures. This indicates that children's story telling is not related to their understanding of the mechanics of the book reading process, but that most measures of emergent literacy are moderately correlated.

Table 4

Correlations among pretest measures of emergent literacy.

| | PPVT-III | EVT | Non-pict. | BKConcepts | Comp. |
|------------|----------|--------|-----------|------------|-------|
| PPVT-III | -- | | | | |
| EVT | .574** | -- | | | |
| NP | .304* | .365** | -- | | |
| BKConcepts | .654** | .509** | .259 | -- | |
| Comp. | .562** | .478** | .591** | .539** | -- |

*p<.05 **p<.01.

Main analysis

The purpose of the analysis was to determine the effect of adult book reading style on children's emergent literacy skills. Specifically, it was intended to determine how children's initial skill level interacted with different reading styles. Consequently, a method of analysis that provided predictors of post-test scores was required.

A dummy variable regression procedure (DVR) provides a method of testing main effects of reading styles as well as interactions between children's initial skill levels to test predictions about outcomes. It involves creating pairs of dummy variables to test for effects of experimental group as well as group by pretest interaction effects. These variables are used in a separate model to predict each post-test variable. The resulting model predicts the influence from the experimental group, each pretest variable, and the interaction of each pretest variable with experimental group on a particular post-test measure. All pretest variables were used in all models because the level of intercorrelation of the emergent literacy measured used. Once a model has been established, the individual contribution to the model that each term makes is established by entering that covariate into the model after all the other covariates have been entered. The dummy variables are tested in pairs which meant that there were 11 terms to

enter separately in each model; the five pretest variables, the dummy variable pair for experimental group and the five pairs of dummy variables that coded for the interaction of pretest variables with experimental group. If the individual contribution of a term significantly increases the predictive power of the model then follow-up regressions between the relevant groups test the source of the group or interaction effect.

Essentially, interaction effects are the result of slope differences by group in the regression of a post-test variable on a pretest variable. The calculation of slopes shows whether or not the relationship between the outcome measure and the pretest level is constant across groups. In concrete terms, this means that the way in which different initial skills levels interact with adult reading style to produce outcome measures can be determined. That is, if initial skill levels do not interact with adult reading style, then the slopes of each post-test measure against each pretest level in the different groups would not be significantly differently from each other. If, however, initial skill level does interact with adult reading style, then the slopes of the results for each experimental group will differ significantly from each other when plotted against any post-test measure.

It was hypothesised that overall, children whose emergent literacy skills were higher at pretesting would benefit most from the Performance oriented reading style, as it is a higher level style of reading and also is less interrupting of the story. Children whose initial emergent literacy skills were lower were expected to benefit most from the more interactive and interruptive Dialogic style of reading. As there were five outcome measures to be predicted, each will be discussed separately.

Table 5

Predicting children's post-test skills

| Pretest Measures | Post-test Measures | | | | | | | | | |
|------------------|--------------------|------------------|---------|--------------|-----------|------------------|----------|------------------|------------|--------------|
| | PPVT | | EVT | | Non-pict. | | Concepts | | Story Comp | |
| | β | ΔR^2 | β | ΔR^2 | β | ΔR^2 | β | ΔR^2 | β | ΔR^2 |
| PPVT | .17 | .01 | .14 | .01 | -.06 | .00 | -.03 | .00 | .28 | .03 |
| EVT | .35 | .06** | .67 | .22** | .27 | .04 | .16 | .01 | .06 | .00 |
| Non-pict. | .35 | .04* | .14 | .01 | .13 | .01 | .09 | .00 | .31 | .03 |
| Bkconcepts | .36 | .05* | .09 | .00 | -.11 | .01 | .30 | .03 ^m | .04 | .00 |
| Story Comp. | .36 | .04* | -.01 | .00 | .13 | .01 | .25 | .02 | .08 | .00 |
| Expt. Group | .23 | .01 | -.11 | .01 | .51 | .01 | .67 | .01 | -.49 | .01 |
| | .28 | | .67 | | .27 | | -.44 | | .84 | |
| Grp x PPVT | -1.44 | .03 | -.43 | .02 | -1.74 | .07 | -.22 | .04 | .04 | .00 |
| | .72 | | .95 | | -.22 | | 1.32 | | -.21 | |
| Grp x EVT | .32 | .00 | -.16 | .01 | 1.21 | .03 | -1.56 | .05 | .04 | .00 |
| | -.44 | | -.36 | | .22 | | -.11 | | -.22 | |
| Grp x NP | -.77 | .02 | .28 | .01 | -.84 | .08 ^m | -.66 | .02 | .35 | .05 |
| | .47 | | .06 | | -.18 | | .39 | | -.76 | |
| Grp x BK | .71 | .02 | .00 | .06** | .32 | .01 | .03 | .00 | .08 | .00 |
| | -.49 | | -1.14 | | -.42 | | .06 | | -.29 | |
| Grp x Comp. | .77 | .04 ^m | .47 | .01 | .26 | .03 | 1.45 | .11** | .15 | .06 |
| | .72 | | -.36 | | .39 | | -.97 | | .75 | |

* $p < .05$ ** $p < .01$ $m = p < .10$

Note: All beta weights were calculated upon final entry of the term in the model.

Predicting children's receptive vocabulary

The full model of predictors for the PPVT-III resulted in an adjusted R^2 of .59, $F(17,38) = 5.55, p < .01$. Children's post-test PPVT-III scores were uniquely predicted by pretest EVT, book concepts, story comprehension and non-pictured story retelling scores. Reading style did not uniquely predict children's post-test vocabulary and the interaction between reading style and story comprehension scores only marginally predicted post-test vocabulary ($\Delta R^2 = .04, F(2,38) = 2.63$,

$p < .10$). This marginal interaction was followed up and indicates that children in the control group did not differ significantly from children in either experimental group.

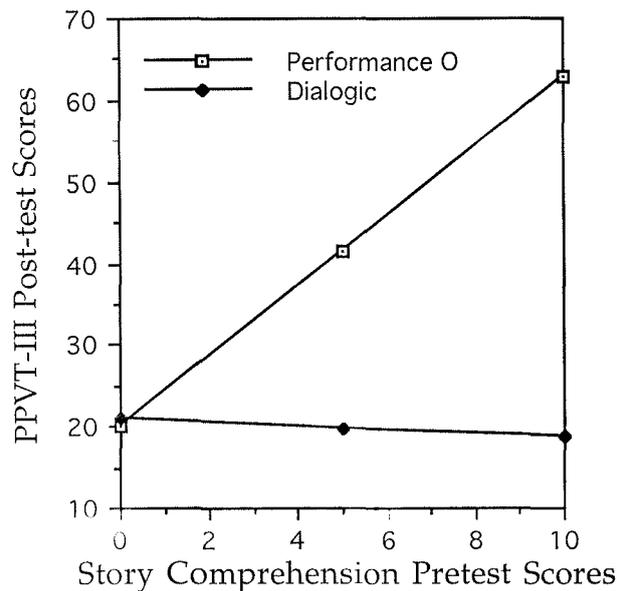


Figure 1. Children's post-test PPVT-III scores by group as a function of their story comprehension pretest scores.

Children who were initially high on story comprehension skills, however, had higher receptive vocabulary scores when they were read to in the Performance oriented style rather than the Dialogic style ($\Delta R^2 = .07$, $F(1, 24) = 7.40$, $p < .025$; see Figure 1 for an illustration and Table 6 for slope information). This may indicate that children with better story comprehension gain more vocabulary when they are read to with a style that focuses more on understanding of the text, rather than discussion of the pictures.

Predicting children's expressive vocabulary

The full model of predictors for children's expressive vocabulary resulted in an adjusted R^2 of .69 ($F(17, 38) = 8.14$, $p < .01$). Of the five pretest variables, only children's score on the EVT contributed uniquely to predicting their post-test EVT score. Once again, experimental group did not provide a unique contribution to the final model, although there was a significant interaction between group and

pretest book concepts score ($\Delta R^2=.06$, $F(2, 38) = 5.67$, $p<.01$). This interaction was followed up and indicates that children who were initially low on their book concepts made greater expressive vocabulary gains when they were read to in the Dialogic style rather than being in the control condition ($\Delta R^2=.10$, $F(1, 26) = 9.48$, $p<.01$; see Figure 2).

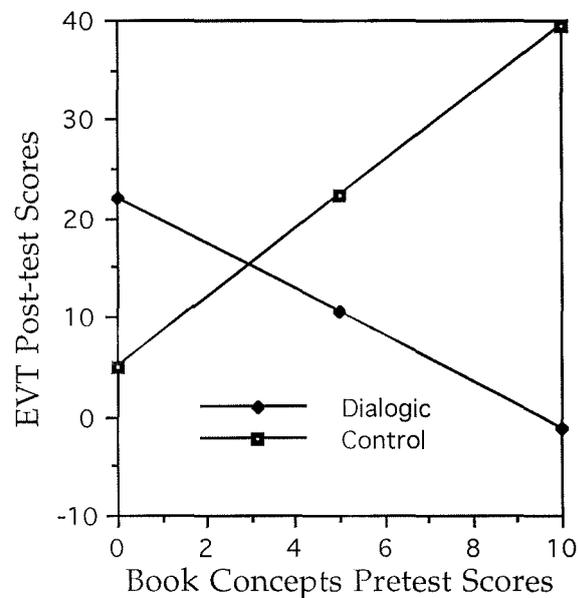


Figure 2. Children's EVT post-test scores by group as a function of their pretest book concepts scores.

In contrast, children who were initially high on book concepts made greater expressive vocabulary gains when they were in the control group, rather than the Dialogic group (see Table six). Children in the Performance oriented condition did not significantly differ from either the control or Dialogic group children in their expressive vocabulary. This indicates that reading in a low level style to children who have a higher awareness of book concepts may not benefit their expressive vocabulary, relative to the benefits they would gain by engaging in other activities.

Predicting children's non-pictured story retelling score

The full model of predictors for children's story retelling resulted in an adjusted R^2 of .24 ($F(17, 38) = 2.02$, $p<.05$). Children's story

retelling scores were not uniquely predicted by any of the pretest variables and only marginally predicted by an interaction between their non-pictured pretest scores and their experimental group ($\Delta R^2=.08$, $F(2, 38) = 3.04$ $p=.06$). When this interaction was followed up, it indicated that children who were initially low on story retelling ability did better on this measure at post-testing if they had been in the Performance oriented rather than the Control group ($\Delta R^2=.07$, $F(1, 26) = 4.31$, $p<.05$) and that children in the Dialogic group did not differ significantly from either of these groups.

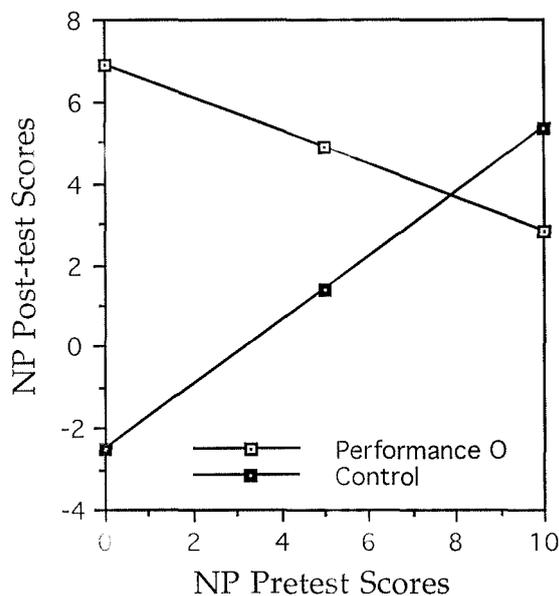


Figure 3. Children's story retelling post-test scores by group as a function of their story retelling pretest scores.

This finding is contrary to the hypothesis that Performance oriented reading would be more beneficial for children with initially high pretest skills. These results may, however, have arisen as a consequence of the way the Performance oriented style engaged children in story retelling. The retelling was highly structured by the reader, which may have resulted in children with good story retelling skills becoming disinterested as their abilities were not being challenged.

Predicting children's book concepts scores

The full model of predictors for children's book concepts score resulted in an adjusted R^2 of .41, $F(17, 38) = 3.28$, $p < .01$. The only pretest variable that uniquely predicted children's book concepts scores was their pretest score for this same measure, however this was only a marginal result. The interaction between group and story comprehension had a significant predictive power for book concepts awareness post-test scores ($\Delta R^2 = .11$, $F(2, 38) = 5.34$, $p < .01$).

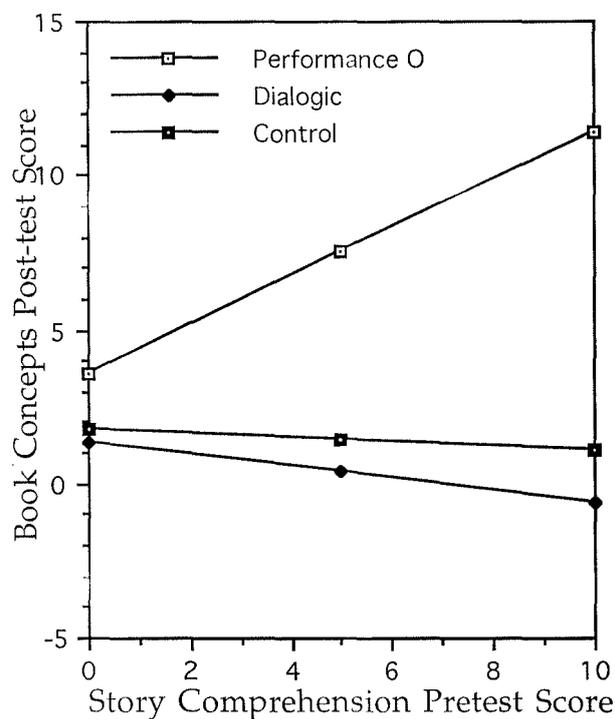


Figure 4. Children's book concepts post-test score by group as a function of their story comprehension pretest score.

When this interaction was followed up, it indicated that children with good story comprehension skills made significantly greater gains in their book concepts when they had been in the Performance oriented group, when compared to both the Dialogic $\Delta R^2 = .18$, $F(1, 24) = 14.12$, $p < .01$ and control groups ($\Delta R^2 = .11$, $F(1, 26) = 6.46$, $p < .025$; see Figure 4). In contrast, children in the Dialogic and control conditions showed the greatest improvement in book concepts when they had

originally been low on story comprehension skills (see also Table 6). This indicates that reading to children benefits their book concepts skills when their story comprehension is high, and the reading style is high level, but does not do so when the reading style is lower level and interruptive. This is possibly because children with good story comprehension skills become disinterested when the reading style is of a lower level and thus do not pay attention to the story reading at all. In contrast, when the reading style is of a higher level, children with better story comprehension may attend more closely to the story and incidentally notice more about the mechanics of book reading.

Table 6

Slopes for experimental groups as a function of pretest score

| Group | <u>Post-test x Pretest scores</u> | | | |
|---------------|-----------------------------------|---------------------------|--------------|-----------------------------------|
| | PPVT-III (x Story comp.) | EVT (x BK concepts) | NP (x NP) | BK concepts (x Story comp.) |
| Performance O | 4.26 | .58 | -.41 | .78 |
| Dialogic | -.23 | -2.31 | .03 | -.20 |
| Control | 1.47 | 3.44 | .78 | -.07 |

Predicting children's story comprehension skills

The full model of predictors for children's story comprehension skills resulted in an adjusted R^2 of .09 ($F(17, 38) = 1.33, p=.23$). Children's story comprehension skills were not predicted by any of the pretest variables, experimental group or any group by variable interaction. This indicates that there may have been flaws in the story comprehension measures or, alternatively, that children's story comprehension may be specific to the book being used in testing.

Discussion

Although Dialogic reading has been advocated by Whitehurst and colleagues (1988; 1994) as the most beneficial way of reading to young children, this study is the first to compare Dialogic reading with another style. Performance-oriented reading was chosen as a comparison style because it occurs naturally (Dickinson and Smith, 1994) and has previously been shown to benefit the literacy skills of more advanced children in comparison to other reading styles (Reese & Cox, 1999). It was predicted that the two styles would have different effects depending on the initial skill level of the children receiving the reading. In particular, it was predicted that children with initially high emergent literacy skills would benefit most from performance oriented reading whereas children with lower level skills were expected to benefit most from dialogic reading. As emergent literacy consists of many different skills, however, it was also predicted that different skills would be affected differently by the two styles. Specifically, different patterns of results were expected for children's story telling ability compared to other aspects of emergent literacy.

Summary of results

This study is among the first to show an effect of adult reading style on children's literacy skills when children in an intervention were read to only in small groups at their kindergarten and did not receive extra reading at home. Furthermore, this study shows that children benefit from different reading styles depending on their initial skill levels, and that these benefits vary depending on the skill assessed. In general, more skilled children benefited more from performance oriented than dialogic reading and the reverse was true for less skilled children. Children with lower level story retelling abilities, however, benefited more in their story telling ability from the Performance oriented reading, indicating that some aspect of this style

was specifically benefiting lower level children's story retelling skill. In contrast, dialogic reading specifically benefited the expressive vocabulary level of children whose book concepts were initially low when compared to children in the control group. Dialogic reading also benefited the receptive vocabulary and book concepts awareness of children whose initial story comprehension skills were low when compared to Performance oriented reading. Children who were initially high on the story comprehension measure showed greater gains in their receptive vocabulary and book concepts scores if they had been read to in the performance oriented style. Neither reading style aided children's story comprehension skills nor interacted with children's maternal education level.

Overall, these results indicate that variations in adult book reading style affect children's emergent literacy skills differently, depending on the child's skill level and on the skill being measured. Furthermore, this study is among the first to compare adult book reading styles when children were read to in small groups. As this study is the first to compare Dialogic reading with another adult style, however, the results must be interpreted tentatively, especially as Dialogic reading was slightly modified in this experiment. Likewise, the mechanisms by which each style is thought to affect children's post-test scores are only tentative explanations. What is important, however, is the fact that children's initial skill level interacted with reading style to produce results, and both styles had some beneficial effects, indicating that there is no single correct or best way to read to children. Consequently, it is important to discuss how particular skills were benefited by each style in terms of children's initial skill level.

Predicting receptive vocabulary scores

When children's story comprehension scores were lower, Dialogic reading had a marginally beneficial effect on their receptive

vocabulary scores as measured by the PPVT-III. In contrast, children whose story comprehension skills were higher showed marginal receptive vocabulary gains when read to in the Performance oriented style. Interestingly, previous research using dialogic reading also found that it had only marginal effects on receptive vocabulary (Whitehurst et al., 1988), indicating that this aspect of children's vocabulary may be slightly more difficult to affect through shared book reading. Despite this, it is important to note that the results were in the predicted direction and were similar to those of Reese and Cox (1999) who found that the Describer reading style, which is similar to Dialogic reading, was more beneficial for receptive vocabulary than other styles they studied. Furthermore, as the six week intervention produced a marginal result it may be that longer exposure to an appropriate reading style would produce a significant result. The marginal results may have arisen as children who had better story comprehension benefited more when the style did not interrupt the text, allowing them to interpret novel words in context. In contrast, when children had a limited understanding of the meaning of the story, they may have benefited more from frequent interruptions of the text. These interruptions may have helped by allowing children to determine the meaning of novel words by giving them time to use the illustrations to find possible meanings for these words (Sénéchal & Cornell, 1993).

Predicting expressive vocabulary scores

In contrast to children's receptive vocabulary, larger effects were obtained for children's expressive vocabulary. In particular, children whose initial book concepts awareness was lower showed greater gains in their expressive vocabulary when they had been read to in the Dialogic style compared to children in the control group. Children who were read to in the Performance oriented style showed no significant gains as a function of their book concepts abilities and children with

higher book concepts abilities made greater gains in their expressive vocabulary if they had been in the control rather than Dialogic condition. This result indicates that children whose book concepts awareness is high may not learn to use novel words through shared book reading, at least with the styles used in the present experiment. In contrast, children whose book concepts skills are lower may learn to use novel words during Dialogic reading because this style of reading provides information about book concepts, allowing children to focus on the text. That is, Dialogic reading begins by introducing the book by its title and asking children to repeat the title with the reader. The style also asks questions such as "What is happening on this page?" during the story retelling part of the story, thus providing a label for part of the book.

There are also three aspects of the Dialogic style that may have further benefited children's expressive vocabulary. Firstly, Dialogic reading requires a high level of adult/child interaction, with a high level of comments being elicited from the child during the reading. Consequently, the quantity of comments being elicited from the child may aid their expressive vocabulary as they become more accustomed to commenting on the stories, rather than listening passively to them. Secondly, dialogic reading involves a high level of repetition, largely by the adult who repeats and expands upon children's comments. This may aid children's expressive vocabulary as their vocalisations are reinforced and their pronunciation can be subtly corrected if necessary. Lastly, as the reading took place in a group situation, less able children may have benefited from listening to the comments made by their more capable peers and imitating their responses. Thus, Dialogic reading provides a high level of scaffolding for expressive vocabulary, which may be why it is often found to benefit this skill (see Valdez-

Menchaca & Whitehurst, 1992; Whitehurst et al, 1988; 1994 for examples).

Predicting children's story retelling skills

In contrast, the structure of the Performance oriented style meant that this style provided a high level of scaffolding for story retelling. It was possibly as a consequence of this scaffolding that children whose initial retelling skills were lower performed better on this ability if they were read to in the Performance oriented style, rather than being in the control group. Specifically, the story retelling aspect of Performance oriented reading focused on critical aspects of the story line and an explanation of events, as well as helping the children to relate the story back to their own lives or give opinions on the story. As the retelling was structured by the reader, less skilled children were scaffolded through the retelling, and their comments were always praised by the reader, providing them with further encouragement to participate. The story retelling may, however, have been too structured for more highly skilled children, preventing them from demonstrating their awareness of the story-line, which in turn meant they could not expand on their skills. Since children in the control group that were initially good at story retelling showed an improvement in this ability over time, it is also important to note that, for some children, story retelling is a skill that they improve in the course of their daily routine, without any extra reading. As the story retelling results were marginal, however, these hypotheses should be interpreted cautiously, as further research is required to establish a stronger relationship between children's story retelling skills and adult reading style. Furthermore, it is important to note that only children's ability to provide non-pictured information in the story retelling was measured, thus other aspects of story retelling skills may benefit differently.

Predicting children's book concepts scores

Although the results for the story retelling skill were marginal, children's book concepts awareness was significantly predicted by the model. Specifically, children with good story comprehension skills made greater gains in their book concepts awareness when they had been in the Performance oriented group. In contrast, children in both the Dialogic and control conditions showed a greater improvement in their book concepts awareness if they had initially lower story comprehension skills. This implies that when children with good story comprehension skills are read to in a style that interrupts the text they do not pick up information about the mechanics of book reading easily. This may be because they are distracted by the interruptions of the text and consequently have to concentrate harder on the story line than usual which, in turn, means they are unable to attend to other aspects of the book reading. If, however, these children are read to in a style that does not interrupt the story, like Performance oriented reading, then their ability to understand the story line enables them to attend to other aspects of the reading process, such as the information measured by the book concepts test.

Interestingly, when children's initial story comprehension skills were lower, they showed gains in their book concepts awareness when they had been in either the Dialogic or control group, neither of which differed significantly from the other. This indicates that when children are less skilled at story comprehension, they may learn information about the mechanics of book reading differently than more skilled children. That is, children in the control group improved to the same extent that children in the Dialogic group did, which indicates that it may not be an aspect of adult reading style that influenced the book concepts awareness of children with lower story comprehension skills.

Alternatively, as Dialogic reading focuses on lower level aspects of shared book reading such as requesting labels for pictures, rather than story comprehension, children read to in this style may have been able to attend to the mechanics of book reading incidently. That is, children who were poor at story comprehension may have benefited more from a style that focuses on lower order abilities, enabling them to incidently learn about the mechanics of book reading, rather than focusing their attention on story comprehension which they find difficult. If this is the case then children with lower level story comprehension skills in the control group may have received reading during the course of their daily routine that enabled them to learn about the mechanics of book reading to the same extent that children in the Dialogic group did. Further research that examines children's ability to elicit appropriate scaffolding from adult readers would be beneficial in clarifying this point. This is particularly important as, at least for some children, an overall increase in the amount of shared book reading they receive, even if it is of an appropriate level, does not seem to be the only factor in assisting their book concepts awareness.

Predicting children's story comprehension

Interestingly, although children's story comprehension ability was a useful predictor of some of their emergent literacy skills, this ability was not predicted by any of the other skills measured at pretesting or by adult reading style. There are several possible reasons for this. Firstly, story comprehension may be a more fluid ability than others tested, varying from story to story depending on the child's familiarity with the subject matter. This idea is supported by the fact that no other book reading research has been able to demonstrate an effect of story comprehension that generalises beyond a specific book. Secondly, there may have been a problem with the tests used in the present experiment to measure this ability. The book used at pretesting

has been used more extensively in past research and although children were tested on books by the same author at pre- and post-testing, the books differed in their structure, with the book used at post-testing containing more narrative elements than that used at pretesting. This indicates that certain styles of book may be inherently easier for children to comprehend than others. Consequently, it may be necessary to use the same book at both pre and post-testing to get a more consistent measure of children's story comprehension ability. It is also important to note that it is rare for children to be read a book only once and thus, a measure of improvement in story comprehension across a given number of readings of a story may give a better insight into a child's story comprehension ability than a single measure from a single reading of a story. As research into emergent literacy is relatively new, however, it is important to develop techniques and tools for undertaking the research so that an accurate and standardised measure of story comprehension for this age group can be used in the future.

Limitations

In addition to the limitations regarding the story comprehension measure, there were two additional limitations to be put on the results from the present experiment. Firstly, a fidelity check indicated that children in the Dialogic group received more comments than children in the Performance oriented group. Although this is of some concern, as it indicates that it was perhaps more difficult to implement the Dialogic style, there were no main effects of style on any of the post-test measures. This indicates that the total number of comments children received did not affect the results but it is important that future research using the Dialogic style ensures that experimenters are well trained.

Secondly, the homogeneity of the sample means that results may not be applicable to all segments of the population. McNaughton

(1995), for example, found that a performance routine, which involved children learning to recite the story by copying the adults' reading of it, was used in some cultures. Given that disparity between the culture of the home and the culture of the school can have negative implications for children's literacy (see Heath, 1986, for an example), how kindergarten and school based interventions interact with styles of reading at the child's home should be investigated in future research.

Implications of the results

Although the present experiment did not establish any useful predictors of story comprehension, it did provide some valid and important information about other aspects of emergent literacy. Of primary interest is the fact that both styles of reading proved to be beneficial for children's emergent literacy skills, and that different aspects of the two styles benefited different children in different ways. Furthermore, the present experiment was able to show an effect of adult reading style in a group situation, which is a positive move towards making research more accessible and relevant to those who work in child care, as one-on-one reading in these situations is often impractical. The present experiment was also able to provide support for the work of Reese and Cox (1999), who were the first to determine that children's initial skill level interacts with adult reading style to produce a beneficial effect of shared book reading. Shared book reading was not, however, the only way children's emergent skills developed. Children in the control group also showed gains in some emergent literacy skills, indicating that preschoolers may learn incidentally when in a literacy rich environment, such as kindergarten or their homes. Consequently, perhaps the most important finding of the present research is that an eclectic approach to shared book reading and literacy in general may be most beneficial for young children whereas

maintaining a rigid style that does not change in accordance with children's skill base may not be beneficial at all.

Conceptual implications

Conceptually, this view is similar to Vygotskian theory and Rogoff's (1990) social-interactionist theory, both of which argue that children learn best from interactions which enable them to achieve more than they are capable of achieving alone. Ideally, as these interactions evolve, children gradually become more proficient at, and the adult less involved in, the task until eventually the child is capable of undertaking the task alone. It is, however, important to note that this model of learning was developed to explain the transmission of knowledge between generations in a cultural or historical context (van Kleeck, Gillam, Hamilton & McGrath, 1997). Consequently, the use of such frameworks to investigate changes in learning over the relatively brief space of six weeks needs to be addressed.

Obviously, children's initial skill level in some tasks interacted with adult reading style to produce changes in their performance on other tasks, but can socio-cultural theories be used to posit an explanation for this effect? As mentioned, scaffolding is a fluid process whereby adults gradually decrease the level of support given to a child in a particular task as the child becomes increasingly able to master the task alone. This necessitates changes in adult behaviour over time, but also implies that a high level of scaffolding equates to a lack of mastery by the child, whereas less scaffolding implies more mastery (van Kleeck et al., 1997).

As both the Dialogic and Performance oriented style had different benefits, depending on children's initial skill level and the skill measured, the results indicate that overall, the level of scaffolding provided by each style (either high or low for a given skill), resulted in corresponding gains for the children. That is, when a style provided a

high level of scaffolding for a given task, lower level children performed better on that task, in that style. In contrast, higher level children performed better when there was less scaffolding. Thus it would seem that a socio-cultural framework can be just as useful for investigating short term learning, as the transmission of knowledge across generations. Furthermore, by investigating how children's mastery of certain emergent literacy skills affected the benefits they received from shared book reading, it was possible to determine relationships that could provide an insight into how an intervention will benefit a child as well as how different literacy skills benefit each other. Despite this, however, the time frame that this investigation was completed in was relatively short. Future research is required to determine not only the efficacy of intensive but short term interventions, but the efficacy of both reading styles across time and with other age groups. Even so, this style of research, and particularly the analytic method used has provided new information in the field of emergent literacy research.

Analytical implications

Specifically, the use of dummy variable regression allows researchers to account for previously confounding factors which, in turn, clarifies results. Previous research using Dialogic reading has, for example, sometimes failed to obtain results for expressive language, a skill that is well scaffolded by this style of reading. Whitehurst and colleagues (1994) found that after a year long intervention, only children who had been receiving Dialogic reading both at home and at kindergarten showed gains in their expressive language skills. Children who had only been receiving Dialogic reading in groups at kindergarten did not show such gains. In contrast, the present experiment which also measured expressive vocabulary in children who received Dialogic reading in groups at their kindergarten, did find

an effect of Dialogic reading on expressive vocabulary. This result was, however, qualified by the fact that only children who had initially lower book concepts awareness showed gains in their expressive vocabulary when read to in this style, whereas children with a good book concepts ability did not. Consequently, using an analytic technique that was able to covary pretest ability with reading style to predict outcomes clarified a result that was previously inconsistent.

This does not imply that the same interaction was operating in Whitehurst and colleagues' (1994) subjects, but rather that many emergent literacy skills interact, not only with each other and the child's initial ability but also with adult reading style. An awareness of the complexity of these interactions means that a more accurate picture of a child's given strengths and weakness in emergent literacy can be achieved. Before this is possible, however, further investigation is needed to determine how consistent such interactions are across the population.

Despite the need for more research in this area, it is of importance to note that neither of the two styles used were better or worse than the other, merely different. Furthermore, previous research comparing different adult styles of book reading has also found that several styles had beneficial outcomes, but these benefits were again very specific to children's initial skill levels (Reese & Cox, 1999). Consequently, it may be more beneficial to recommend that adults attend to what the child needs from shared book reading rather than their own behaviour, as it is extremely unlikely that any style will ever encompass all aspects of emergent literacy in a way that benefits the unique variations of skill in any child. Despite this, however, it is important to note that children, especially those attending preschools or kindergarten, are exposed to many different adult reading styles and are also exposed to literacy skills in activities other than shared book reading. This,

combined with an increasing awareness about the efficacy of interventions, and the complexity of interactions that surround emergent literacy development, means that children will probably benefit, in some way, from most adult styles of reading.

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Appendix A

Books Used in the Intervention.

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Appendix B

Story Comprehension Questions.

The snowy day.

P7. What time of year do you think it is?

P11. Look at his footprints. Why are they different here, from here?

P13. What did Peter use to find sticking out of the snow to make a new track?

P16. Where did the snow come from?

P19. Why didn't Peter join the big boys?

P23. What does it mean to pretend?

P27. What is Peter thinking about in the tub?

P28. Where is the snowball. (if children don't know, reply it melted) Why did it melt? How could Peter have saved the snowball inside?

P30. What does it mean to dream? What is a dream?

After reading. What was the boy's name in the story? What are some of the things Peter did in the snow? What else? What did Peter bring inside?

Peter's chair.

P4. Why do you think the building fell down? Why do children have to be quiet around new babies?

P5. Why did they paint Susie's cradle pink and not blue?

P8. What else have they painted pink besides the high chair?

P10. What do you think Peter is going to do with the chair?

P14. What does it mean to run away?

P16. Do you think Peter has run away? Why /why not?

P18. Why doesn't Peter fit in the chair?

P19. What does it mean to have an idea? What is an idea?

P22. Why does Peter's mother think he's behind the curtain?

P25. How does Peter feel about Susie now?

After reading. What was the baby girl's name in the story? What are some of the things Peter took with him when he ran away? What else? What did Peter do with his chair at the very end of the story?

Appendix C

Style Protocol for Billy Goats Gruff.

Performance oriented.

Day 1 (before reading)

This book is called The three billy goats gruff. It's about three goats that don't have enough to eat, and a mean old troll who won't let them cross his bridge to get to a meadow full of food. Shall we see what happens to the goats and the troll?

Read the book, responding to unelicited comments with yes or we'll see.

After reading, ask **Why did the billy goats want to cross the bridge? Why wouldn't the troll let them? I think it is because the troll is mean and grumpy and didn't want them to get to the meadow where they would be happy. Who knows what a meadow is? It's like a paddock. My favourite part was when the big billy goat butted the troll into the river. Let's go back and see some other parts.**

Performance oriented Day 1 cont.

Go back through the book but without reading the text:

P5. There are the three billy goats gruff.

P7. What are they looking at here? Why is that one licking his lips?

P9. I think that troll looks pretty scary, don't you? Are trolls real? I think they are made up like monsters and fairies.

P11. Where is the billy goat going? Why does he look so scared?

P13. The troll wants to gobble him up. What will the little billy goat do? What would you say if you were him?

P15. The troll looks really angry because there is someone on his bridge again. Who do you think it is?

P17. Do you think the second billy goat is as scared of the troll as his little brother? Why/why not?

P19. Do you think the troll will be angry with or scared of the third billy goat? Why/why not?

P21. What's the troll saying here? Is he scared of the billy goat here? I think he's just angry that there is some-one else on his bridge.

P23. Do you think the third billy goat is frightened of the troll? I don't think he is, because he has very big horns.

P25. The troll is so angry here that he wants to gobble the billy goat up.

P27. I think the troll is scared, not angry now, because the billy goat is bigger than him.

P28. What do you think will happen to the troll now that he has been thrown in the river? What would you do if you were the troll? I would swim to another bridge and live under it and be nicer if people wanted to cross it.

P31. What will the billy goats do now? Do you think they will like living in the grassy meadow?

Performance oriented Day 2

(before reading)

Who remembers what this book is called? Where did the billy goats go? What happened to the troll?

Read and respond to unelicited comments by turning the question back or confirming.

At the end, without going back through the book, ask: **Who liked that book? How did the billy goats trick the troll? Did the littlest and middle size billy goats want the troll to eat their big brother? Why did they say Don't eat me, wait until the third billy goat comes then? I think they said that because they knew the third billy goat would butt the troll into the river.**

Dialogic.

Day 1:

Read the title of the book while point to each word with your finger. Get the children to repeat the title as you point to each word.

Say "Do you know what a billy goat is?" and "A billy goat is a boy goat. A girl goat is called a nanny goat." Have any of you ever seen a goat?

Read P5 and ask: "Which goat is the biggest and which one is the smallest? How can you tell.

After the story, but with without going back through the book, ask:

Why did the three billy goats want to cross the bridge?
Which billy goat crossed the bridge first?
Which billy goat crossed the bridge last?
What happened to the troll?

Day 2:

P8. What is the troll doing? (sitting under the bridge)

P11: "Who's that tripping over my ..."

P15. "Who's that tripping over my ..."

P18. "...trip trap.." (wait for completion).

P20. (before reading) The troll is yelling at the billy goat.

P25. What's the troll doing here? (Climbing onto the bridge).

P28. What are these? (fish)

P31. There's the troll in the river.

P32. There are the three billy goats gruff eating the grass in the meadow. What are some foods other animals eat?

Day 3 Reconstruction:

(before reading) What's the bank called?

P5: What are the names of the Billy Goats?

P6. Tell me about what you see here?

P 9: What is this page about?

P11: Now what's happening?

P13. What's happening on this page?

P15: Tell me about this page.

P17. What do you see here?

P18: What's he saying here?

P21 "Who's that tramping over my ..." (wait for completion).

P23 What does the Billy Goat say back?

P25. What's happening here?

P27: Now what's happening?

P29. What's happened to the troll here? (falling into the river).

PP31-32: What happened in the end?

Appendix D

Responses to elicited comments.

Performance oriented:

E. What are the sheep so happy about? (Scripted)

C. They're going to have the birthday.

E. Good. (Unscripted)

Dialogic:

E. What did they buy? (scripted)

C1. Hay.

C2. A present.

C3. Money.

C4. And and and the out-of-reach ball.

E. Good. An out-of-reach ball is what they brought, and that was the present that they brought to give to the sheep who's having a birthday. (unscripted, with praise, repetition and expansion).

E. How did they pay for it? (scripted).

C2. Um, with the wool and some money from their bank.

E. Good. (unscripted, praise only).