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## The effects of parent-delivered instruction on the phonemic awareness and letter-identification skills of kindergarten children.

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THE EFFECTS OF PARENT-DELIVERED INSTRUCTION ON THE PHONEMIC  
AWARENESS AND LETTER-IDENTIFICATION SKILLS OF KINDERGARTEN  
CHILDREN

A Dissertation Presented

by

REBECCA N. DOWLING

Submitted to the Graduate School of the  
University of Massachusetts Amherst in partial fulfillment of the requirements for the  
degree of

DOCTOR OF PHILOSOPHY

May 2000

Counseling Psychology Program

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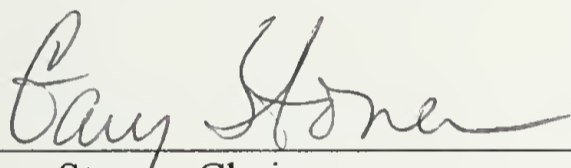
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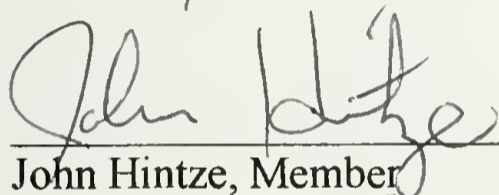
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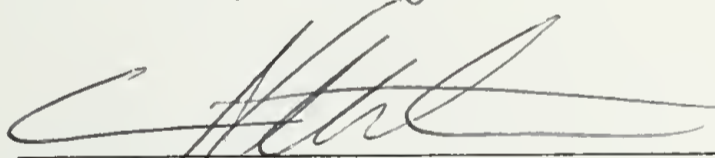
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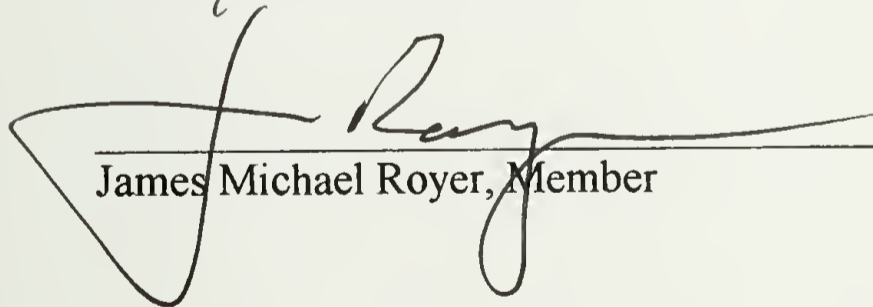
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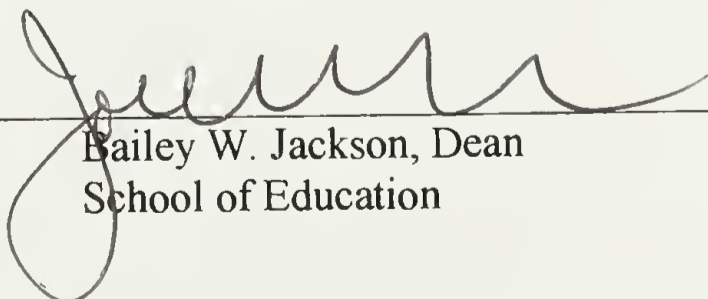
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Bailey W. Jackson, Dean  
School of Education

To my parents

## ACKNOWLEDGMENTS

I wish to thank my advisor and chairperson, Gary Stoner for his continued support and guidance on this project and others within the School Psychology program. In addition, I would like to thank the other members of my committee, William Matthews and James Michael Royer for their assistance.

I wish to thank the teachers, parents and children who participated in this project, particularly Sue Biernes for her continued support and patience throughout the data collection period. Thanks also to the various students in the School Psychology program who helped me with initial data collection, and child-care during the training sessions, and to Meg O' Hearn-Curran for her patient support throughout.

Houghtin Mifflin Publishing Company donated a number of books for the parent training, and Friendly's Ice Cream donated gift certificates for the students participating in the study. Thank you for these donations!

A special thank you to my family for their support and love throughout, as well as appreciation to Rachel Antell and other wonderful friends for their support, integrity and generosity.

## ABSTRACT

### THE EFFECTS OF PARENT DELIVERED INSTRUCTION ON THE PHONEMIC AWARENESS AND LETTER-IDENTIFICATION SKILLS OF KINDERGARTEN CHILDREN

MAY 2000

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Research in the area of early literacy has strongly supported instruction at the phonemic awareness level. In addition, a number of research articles have discussed the importance of involving parents in their children's education through home-based activities. This study examined the effects of a parent-training on early literacy skills in the areas of phonemic awareness and letter-identification. This study utilized a pre-experimental AB design. Thirty-nine kindergarten children from the northeast were administered early literacy measures (Dynamic Indicators of Basic Early Literacy Skills-DIBELS) ten times during both the base-line phase and treatment phases. Twenty children comprised the treatment group, and their parents participated in five training sessions and 10 weeks of interactive book reading and practice and instruction of specific skills with their children. Results were positive and significant for the three early literacy measures, (Onset Fluency, Letter-Naming Fluency, and Phoneme Segmentation). In

addition, treatment integrity and acceptability were measured. Limitations to the study, implications for education and future research are also discussed.

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## CHAPTER 1

### STATEMENT OF THE PROBLEM

#### Introduction

Learning how to read is essential in Western society. Without this skill, children cannot achieve academically, and in turn, adults cannot succeed in the workplace. Students who do not learn how to read well are at risk for academic failure because by fourth grade students learn about important subjects via reading. A student who has difficulty reading will be unable to excel in other subjects, including math. Additionally, students who have difficulty reading in first grade show signs of low self-esteem in both social and academic settings, further negatively impacting their success (Lyon, 1997).

Despite the necessity of learning to read, and the energy put into the teaching of reading to young children, many children remain poor readers. Research in the area of reading is plentiful across areas including instruction, intervention and assessment. The importance of reading in this society, coupled with the high numbers of American students who are unable to read, has precipitated research with a focus on prevention of reading problems. Much of this research has focused on the specific skills and factors that promote early literacy, specifically in areas of language development, cognitive abilities, and phonological and alphabetic knowledge. For instance, the National Institute of Child Health and Human Development (NICHD) has specifically focused on issues of beginning reading skills and reading difficulties in children. This research suggests that knowledge of letter identification, phonological awareness and exposure to print are

critical precursors for beginning readers. This chapter begins with a summary of data on poor readers and examines the influence of letter-identification, phonological awareness and language development on early reading skill development, and the impact of early exposure to print and socioeconomic status (SES) on beginning reading readiness.

### Data on Poor Readers

Reading problems are prevalent in American schools. According to G. Reid Lyon, (1997), half of American children find learning to read a challenge and 20-30% of these children will consider reading a difficult task throughout their life. Additionally, Lyon (1997) cites disturbing statistics from the National Assessment of Educational Progress (NAEP) that in 1994, “32% of whites, 72% of African-Americans, 67% of Hispanics, 23% of Asians, 36% of Pacific Islanders and 55 % of American Indians were reading below basic levels in the fourth grade” (p. 2). Of these fourth graders, 32% came from households of college educated parents. These data suggest that reading problems are apparent in an ethnically diverse population and cut across socioeconomic status boundaries. In fact, because skillful reading influences success in life it is not surprising that illiterate adults make up “75% of the unemployed, one-third of the mothers receiving aid to families with Dependent Children, or 85% of the juveniles who appear in court” (Adams, 1990, p. 27). These numbers are likely to increase as more and more students drop out of high school. In 1988, 700,000 students dropped out of school and an additional 700,000 students could not read their high school diplomas (Fortune Magazine

as cited in Adams, 1990). It is very likely that these students dropped out in part because of persistent reading problems.

### Research on Reading Remediation

Learning how to read in first grade is important for both social and future academic competence. Children who experience difficulties mastering reading in first grade are likely to become unmotivated to learn and show signs of low self-esteem. Unfortunately, reading problems are persistent and remediation has not proven very effective. For example, in a widely cited longitudinal study, Juel (1988) examined 54 children and found a .88 probability that a poor reader at the end of first grade would continue to be a poor reader at the end of fourth grade, and a probability of .13 that a poor reader in first grade would become an average reader in fourth grade.

Another longitudinal study which examined male subjects in one county from kindergarten to fifth grade found that only 6% of the poor readers in second grade improved by the end of fifth grade (Satz, Taylor, Friel & Fletcher, 1978). Additionally, children who are behind in reading in kindergarten or first grade will likely fall further behind over time. In one study, 74% of the students diagnosed with a reading disability in third grade continued to have a reading disability in ninth grade (Grossen, 1997).

Research has maintained that prevention, and not intervention is the most effective approach to insuring young children will learn how to read. For instance, Juel (1988) found that poor readers entered school with little phonemic awareness and that they were less able to decode by the end of fourth grade than the good readers were by the

beginning of second grade, even after receiving formal phonemic instruction. Frost and Emery (1996) reported that the majority of children with dyslexia are deficient in phonological awareness and that “between ages 9-19, dyslexic children with phonological deficits improve slightly more than one grade level in reading while other learning disabled (LD) children in the same classroom improve about 6 grade levels” (p. 1). The relationship between reading success and success in life, and the lack of success in remediation for reading problems point to the necessity of preparing young children for beginning reading in an explicit and timely fashion.

### An Emphasis on a Preventative Approach to Emergent Literacy

Available research on reading is abundant and covers a myriad of influencing factors ranging from cognitive and developmental to instructional and environmental. Regardless of the individual hypotheses within the research, one common premise is that learning to read is crucial, and that poor readers face greater difficulties in a number of areas than good readers do. Although much of the research is worthwhile, since the final objective is to teach as many children as possible how to read, it makes the most sense to focus on the research that employs a preventative approach to reading. In what is considered by many to be the most comprehensive summary of early reading development, Marilyn Adams' work focuses on the skills that appear to best prepare children for reading instruction. While Adams is supportive of the many domains within the reading research, she is also clear about the importance of promoting certain pre-reading skills, specifically phonological awareness and letter-identification. Adams provides a compelling reason to

focus on the skills aimed at preventing reading problems in young children. Her assertion that these skills are crucial comes from her own synthesis of the current research, which largely supports a preventative approach with a focus on developing phonological awareness skills (e.g. Felton & Pepper, 1995; Gunn, Simmons & Kameenui, 1997; Smith, Simmons & Kameenui, 1997). The idea that teaching pre-reading skills such as phonological awareness might impact reading success in young children, coupled with the disturbing statistics about children's current reading skills in the United States, has guided my decision to focus on this aspect of beginning reading.

### Contributing Factors to Beginning Reading Skills

Adams (1990) has identified three precursors to reading readiness in young children including letter identification, phonological awareness and exposure to print. Myriad other researchers have also focused on the crucial role of phonological awareness (e.g. Smith, et al., 1997; Torgesen, Wagner & Rochette, 1994). Likewise, Kaminski and Good (1996) have identified letter-naming, phonological awareness and language development as basic early literacy skills. Each of these skills will be discussed in turn. It should be noted that although each of these researchers emphasizes a range of pre-reading skills, the overwhelming agreement is on the import of phonological awareness and letter-identification skills.

## Letter Identification

Letter identification has been identified as the best early predictor for reading success (Adams, 1990; Scanlon & Vellutino, 1997). Scanlon and Vellutino (1997) studied the effects of early reading instruction and the variables that most easily identify at-risk readers. Through standardized testing and teacher ratings during the first grade, they found that kindergartners' ability to correctly identify letters was the best predictor for successful first grade reading achievement. Although letter-naming alone has been shown to be predictive in reading achievement, some of the research suggests that it is the combination of letter-naming skills and phonological awareness skills that is most crucial for early reading success (e.g., Adams, 1990). Other research has shown that aside from accuracy, letter-identification is a critical albeit "transitory" contributor to reading achievement (Walsh, Price & Gillingham, 1988).

Since letter-identification appears to develop gradually in children, its frequent monitoring over time can aid in maintaining the progress of acquiring this important skill in pre-reading children (Kaminski & Good, 1996). Adams (1990) provides an explanation of why letter-naming is a good measure for reading success. For pre-readers, easily and confidently recognizing letters allows for an easier understanding of the sounds of letters and the spellings of words. Additionally, since letter names are closely matched to their sounds, easy letter identification should hasten a child's ability to remember a letter's sound, and possibly generate that sound. This in turn promotes development of letter-to-sound correspondence, or the understanding of the alphabetic principal that promotes phonological awareness skills.

## Phonological Awareness

Phonological awareness is “the conscious awareness that words are made up of phonemes or sounds...and requires the ability to attend to one sound in the context of other sounds in the word” (Snider, 1995, p. 444). Many children have difficulties understanding the concept of phonemes because segmented phonemes are not identifiable in spoken words. For instance, when we speak we do not need to break words up by letter sounds, and in fact, each sound blends and overlaps into consequent ones to form the whole word. In an alphabetic language like English, each letter represents a phoneme, “the individual sounds of language that we represent with letters or combinations of letters” (Palinscar & Perry, 1995, p. 334). To understand the relationship between phonemes and letters, a child must be aware of the individual phonemic sounds in a word. Providing early and pre-readers with phonological awareness skills whereby the child learns to consciously distinguish between letter sounds appears to positively influence high-readiness readers.

It is generally acknowledged in the research on early reading skills that a hierarchy of phonemic awareness skills appear to ready young children for early reading success (e.g., Adams, 1990; Smith, et al., 1997). As cognitive abilities develop, a child's sensitivity to phonological awareness moves from simply being able to hear the sound in a letter or a word, to manipulating the sounds. The increasing sophistication of these skills is helpful for tracking a child's phonological awareness skills in preparation for beginning reading instruction. When a child has mastered the easier tasks, she/he is then able to proceed to the tasks that are most predictive of reading success. Adams provides a comprehensive

outline of the phonemic awareness skill development hierarchy. A summary description of each skill is presented in Appendix A.

The easiest of these phonological awareness skills involves knowledge of word rhymes. For example, Bryant, Maclean, Bradley & Crossland (1990) found that young children might develop their initial phonological awareness skills from nursery rhymes. They studied 64 children longitudinally over two years to determine if rhyme detection and phoneme detection scores were related, if the sets of scores were related to children's success in reading and spelling, and if a connection between rhyme/alliteration and reading is independent of a child's ability to isolate phonemes. They found that rhyme and alliteration affects reading because "there is a developmental path from early sensitivity to rhyme to awareness of phonemes a year or more later and this awareness of phonemes is strongly related to reading" (p.435) [and]"sensitivity to rhyme makes a direct contribution to reading by helping children to group words with common spelling patterns" (p. 437).

The second easiest phonological awareness task for young children is referred to as oddity tasks. With oddity tasks, children are asked to choose the odd word in a string of words based on initial, medial or final sounds (e.g. if working on initial sounds, kite would be the odd word in the string of sit, school, sent, kite). Oddity tasks are relatively easy for young children to master because unlike other tasks that require the child to understand the concept that words are composed of individual phonemes, oddity tasks only require that the child notice differences in the sounds of words.

Blending tasks, the third easiest skill, require the child to put together distinct segments of a word to produce the complete word. For instance, the child would need to put together the segments /k/ /a/ /t/ to produce the word cat. Although similar to phonemic segmentation tasks, blending requires the child to remember all of the segments before producing the word, thus relying on an understanding of, and familiarity with, phonemes. Blending tasks have been shown to be an important precursor to reading; one study found that blending scores recorded prior to formal reading instruction were predictive of reading achievement in both first and fourth grade (Perfetti, Beck, Bell & Hughes, 1987).

The next task in Adams' hierarchy is phonemic segmentation, wherein a child can successfully break a word into its corresponding sounds. Initial research in this area was conducted by Liberman, Shankweiler, Fischer and Carter (1974) through a tapping test where four to six year olds were given a stick and asked to tap the number of phonemes in a number of one to three syllable words. Success was measured by the correct tapping for six consecutive words. None of the four year olds could segment by phonemes, but half could segment by syllable, 17% of the five year olds could segment by phonemes, and again half could by syllable and 70% of the six year olds could segment by phonemes and 90% by syllable. These findings contradicted the work of Dolch and Bloomster (1937, cited in Adams, P. 56), suggesting that age seven is the appropriate age for children to learn phonological skills.

In the fifth and most difficult level of Adam's hierarchy, phoneme manipulation tasks, children are asked to pronounce a word after the initial, medial or final sound has been

removed, thus changing, for instance, the word “pink” to “pin” by removing the final sound. Although this type of task has proven highly predictive of later reading ability, many children even by the end of first grade are unable to successfully manipulate phonemes in this manner. An easier task for a young child that is equally predictive of reading success is syllable-splitting where children are asked to manipulate only the initial phoneme of a word, changing, for instance, “cat” to “at”. This type of task is easier for young children because although it requires that the child understands the concept that the first sound in a word can be taken away, it does not require the more complex task of understanding that a word is composed of a series of blended phonemes. Successful syllable-splitting tasks in kindergarten children are predictive of successful reading in first grade. For instance, Share, Jorm, Maclean and Matthews, (1984), found that this success was the best predictor of first grade-reading achievement from a variety of pre-reading skills and factors including oral language ability, motor skill, social behavior, and home background.

Other research also has confirmed that children can learn phonological awareness skills as young as four or five, if those skills are taught explicitly. For instance, Cunningham (1990) compared two instructional programs for kindergarten and first grade students. One group of students received instruction in how to segment and blend the sounds in words. The second group received this instruction with additional instruction that focused on discussion of the utility value of using phonological awareness skills in a reading situation. The children in the second group who received the explicit form of

instruction in phonological awareness skills performed significantly better on measurements of reading achievement than children in the first group.

Perfetti (1992) proposes an alternative approach to the hierarchical one discussed by Adams. In his approach, he argues that the relationship between phonemic knowledge and beginning reading is an interactive one, and that children can begin to read without a prerequisite of the explicit phonemic knowledge that Adams and others discuss (i.e., Cunningham, 1990). He proposes that two types of phonemic knowledge exist; computational phonemic knowledge is necessary for beginning reading, but reflective knowledge is not. Perfetti defines computational knowledge as the “connection between phonemes (or letter names) and letters that allow pronunciations of grapheme strings to be partly or wholly computed” (p. 165) and reflective knowledge as a conscious awareness of these connections. Therefore, the former is a more automatic process, and the latter is not, requiring a conscious ability to think about the individual sounds in a word before producing the word. Computational knowledge is critical and necessary for beginning reading because it is necessary in building the acquisition of a functional lexical representation system, whereby graphemes (letters) are connected to phonemes. However, the more advanced ability of manipulating the phonemes in words is not a requirement for beginning reading, but rather is reciprocal and builds on the beginning reader’s increasing experience with print, thereby demonstrating that it is a “central component of reading rather than a prerequisite” (p. 40). While the reflective phonological knowledge enhances progress in beginning reading, the basic knowledge (computational) suffices for the development of beginning reading, and is developed in

the preliterate child via early experiences with speech sounds (i.e. rhyming) and later, through early experiences with print and letter-sound correspondence.

Adam's hierarchical summary concludes that phonological awareness is a vital skill for reading achievement in early readers. Although the most difficult tasks cannot be assessed in very young children because of the difficult phonological concepts presented, the easier tasks are an important starting point for assessment of reading readiness and prevention programs for reading problems. If the findings of Bryant et. al.'s study are accurate, exposing young children to word rhymes might very well be the first of many important steps for introducing phonological awareness skills to young children, thus increasing their chances of becoming good readers. Since it is likely that children who are gaining phonological awareness skills through nursery rhymes are doing so at home with the help of a parent or other adult, it makes sense that exposure to print, a factor which will be discussed later in this chapter, is cited as an important factor for successful reading by Adams, Kaminski and Good; and Gunn et. al., amongst others. What Adams points out is that children do not implicitly have an awareness of the phonological sounds in words necessary for decoding. Although many children are ready to acquire this knowledge by the time formal instruction in reading occurs, about one-third to one-fifth of middle class children, and more for lower SES groups fail to gain this awareness in first grade.

In agreement with Adam's continuum of easiest to most difficult phonological awareness tasks, Smith, et al. (1997) offer a comprehensive analysis of the factors that contribute to the level of difficulty, specifically the memory requirements of the task and

the characteristics of phonological units. Memory is important in the more difficult tasks because these tasks require more steps for completion; material from each step must be held in memory and then retrieved and connected to new information. For instance, in segmentation, a word is pulled apart into its distinct sounds, which is a one-step process that does not require memory storage (i.e. cat is broken down into the sounds /c/ /a/ /t/). Phoneme deletion is a more difficult task because it requires two steps, segmenting and deleting while holding the remaining sounds in memory and then blending (i.e. cat becomes /c/ /a/ /t/ then /a/ /t/ for an initial phoneme deletion task).

The characteristics of phonological units that contribute to the level of difficulty for phonological tasks are position in word, degree of abstraction, size and phonological properties. For instance, initial and final positions are easier to identify than medial positions in a word.

### Socioeconomic Status Factors (SES) and Language Development

Another influence on pre-reading readiness is Socioeconomic Status factors, and in turn, language development. Many studies have researched SES differences in language development and pre-literacy readiness, including differences in phonological sensitivity (e.g., Raz & Bryant, 1990). Bowey (1995), measured a variety of tasks in 116 preschool children and found “strong SES differences in preschool performance IQ, general verbal abilities, phonological sensitivity, Digit Span, and letter knowledge and in first-grade academic achievement” (p. 485). Differences in word-level reading performance were related overall to SES differences and preexisting differences in phonological awareness.

For instance, differences were found in mean scores between high SES children and low SES children in early literacy measures of sound identity, phoneme identity, rhyme oddity and letter name knowledge.

Language skills in young children have been shown to lead to the development of literacy skills. Although certain studies have shown that children from low SES and minority backgrounds are not deficient in language skills, other studies have provided contrasting results. For example, Hart and Risley (1992) observed the language-parenting environments of 40 families for two and one-half years to determine “how children learn to talk through casual social interactions at home” (p. 97). Results indicated a number of parent-child interactive patterns. Most of the parents stayed with and joined in children’s activities almost all of the time, although some parents participated in less than half of their children’s activities. Most parents used few or no prohibitive words, but for some parents one out of every five words was prohibitive. Exposure to language also differed dramatically, with a range of less than 100 words addressed to a child in an hour to 500 words in an hour. The overall results indicate that the parents from higher SES homes spent more time talking with their children and listening to their children speak.

Hart and Risley (1995) confirm these data in a later publication that described the everyday language use in welfare, working-class, and professional families. After eliminating factors such as gender, race, and family size, they found that SES made “an overwhelming difference in how much talking went on in a family” (p. 62). Children in the welfare families heard 616 words per hour, as compared with 1,251 words per hour in working-class families, and 2,153 words per hour in professional families. Experience

with affirmative and prohibitive words per hour also differed: the child in a welfare family heard an average of 5 affirmatives and 11 prohibitions; a child in a working-class family heard 12 affirmatives and 7 prohibitions, and a child from a professional family heard 32 affirmatives and 5 prohibitions.

Snow (1983) discusses similarities and differences in the development of language and literacy. She points out that while working class children may use language differently than their middle-class peers, they are not deficient in language ability. In contrast, she supports research that contends that social class differences do exist in reading achievement. Snow's article attempts to prove that language and literacy skills are acquired in similar ways, and that these similarities might provide the key to reading success or failure, rather than social class or level of literacy in the home.

Snow cites parental use of routines as important for both language and literacy acquisition whereby situations to engage in language and literacy activities are predictable. One routine activity that contributes to language and literacy acquisition is book reading. The re-reading of favorite books allows the child an opportunity to learn vocabulary, recognize words, become familiar with print and book-handling skills and discuss story schemes. Snow contends, though, that it is not the access children have to books, but the ways in which adults interact with children in activities that both promote language development and literacy-skill acquisition. Particularly, Snow cites the "interaction in middle-class homes [and] the use of conversations to build " shared histories similar to the literate approach to information [which is] stable and enduring,

rather than the oral approach in which shared representations are reconstructed as needed” (p. 185).

### Environmental Factors: Exposure to Print

Research has shown that children from low SES families are exposed to less print than their middle class peers (Foorman, Frances, & Fletcher, 1997; Saracho, 1997). Children who are exposed to print at home will go to school better prepared to learn to read. According to Morrow (1983), early readers “come from homes where parents read to them, readily give help with writing and reading, and often read themselves. These homes have an ample supply of books and writing materials; in them reading is generally valued as an important activity” (p. 222). To understand the home factors that contribute to early reading readiness, Morrow examined the free-time home activities and the characteristics and activities of parents of 396 kindergarten children with high-interest and low-interest in literature. Using classroom observations and teacher evaluations, Morrow assessed the use of literature during free play, the amount of time spent in recreational reading, and the use of literature during free play after an intervention intended to increase the children’s interest in literature (e.g., physical changes to reading corners). To assess children’s activities at home and parents’ characteristics, parents completed a questionnaire that covered information about parent leisure activities, parent-child interactions with books, accessibility of books in the home, child television-viewing habits, and free-time activities.

There were significant differences in the home activities of high and low interest groups. High-interest children preferred crayon and paper activities, looked at books more frequently, had parents who were more likely to enforce rules around television watching, and were read to daily. In contrast, children from the low-interest group preferred playing with blocks and toys, looked at books less frequently, watched more than two hours of television a day and were read to once a week or less.

The parents of children in both groups also showed significantly different characteristics. A greater number of parents in the high-interest group had a college or graduate education, checked reading as a leisure-time activity more often than low-interest parents, and read novels and magazines during reading-time. Low-interest parents tended to read newspapers and work-related material during reading activities. Finally, although both parents reported having books in the home, children who came from high-interest homes tended to have more books and books in more areas of the house, such as the kitchen or the child's room.

Another study by Teale (1978) examined the environmental factors of exposure and type of print as contributing to early literacy skill development. Teale (1978) describes four environmental factors associated with early reading. These include: (a) an availability and range of printed materials in the environment, (b) reading "done" in the environment, (c) an environment that facilitates contact with paper and pencil, and (d) an environment where parents respond to what the child is trying to do. In a longitudinal study, Teale observed twenty-four low-income preschool children and their families in an attempt to determine their physical and social literacy environments. Teale's research

shed some light on the home environments of one small sample. Specifically, he found that although all of the homes had written material in them, the types and amount of material varied greatly. For instance although all of the homes had print in the form of labels, (e.g. cereal boxes), only eight of the homes had written material appropriate for young children. A TV guide was the only type of magazine found in 22 of the homes; in 18 of the homes, magazines and newspapers far outnumbered books. Likewise, in most of the homes, when a child wanted to write, paper and pen were difficult to locate. The range of exposure to print varied from 40 minutes to 7.5 hours of exposure per day.

In looking at the type of print children were exposed to, Teale found what perhaps is the greatest difference between low SES and middle class children's print exposure. From nine exposure to print categories, (daily living routines, entertainment, school-related activity, work, religion, interpersonal communication, participation in information networks and literacy for the sake of teaching/learning literacy), Teale found that children were exposed most to literacy in the domains of daily living routines, entertainment, school-related, religion and literacy for the sake of teaching. Daily living exposure refers to print in the form of food labels, or bills. Entertainment refers to print in either the form of a TV guide or words in a cartoon show. In contrast, there was very little exposure in the domains of work or storybook time. These findings are in contrast to studies in middle-class homes where everyday activities at home include overflow from work through reading and writing activities (see for example Taylor, 1983). Thus, although children in this study were exposed to print, "80% of the reading and writing activities

observed and for almost 90% of all the time spent in these activities, the focus of the activity was not literacy itself' (Teale, 1978, p. 192).

In a recent descriptive study, Purcell-Gates (1996), examined the range and frequency of literacy practices in the homes of 20 low SES families. The research examined the relationships between the type and frequency of print events at home and the literacy knowledge of the children, aged 4-6. The results suggested a large variability in the type and frequency of literacy events. In addition, the results supported specific relationships between literacy practices at home prior to school and the child's knowledge of emerging literacy.

The findings in regard to social domains were similar to those found in the Teale (1978) study. Specifically, the two domains of Entertainment (e.g., consulting TV guides, newspapers, or reading books or magazines) and Daily Living Routines (e.g., cooking, shopping or cleaning) were coded most frequently; storybook reading was higher in this study than in the Teale Study ( $M=.006$  vs.  $.086$ ). Families in this study rarely read work-related material.

A number of important conclusions were drawn by Purcell-Gates. First, similar to the Teale study, it was determined that there is a great deal of variability in the literacy practices in low SES families. Second, literacy activities are not incorporated into all people's lives; less than one instance of actual reading and writing per hour was seen on average in the families participating in the study. Third, the majority of print used in the homes involved reading container text, coupons, advertisements, writing grocery lists and signing names. Fourth, frequency of print use in the home does appear to effect early

literacy success in school, and direct mother-child interactions around print appears to contribute to the child's concept that print "is symbolic and serves communicative purposes" (p. 426). Fifth, children are better served when they observe and experience written text decontextualized from their physical environment, due to the fact that when print is seen in a contextualized form, the child might not notice that print is a separate entity. Opportunities that allow children to interact with print at the letter-name and letter-sound level are more associated with reading success than experiences involving print in the environment. Finally, the research supported explicit teaching of literacy concepts by the parents as one way to increase the literacy knowledge of children, despite the fact that some educators believe it is inappropriate at a developmental level.

In a similar vein, Saracho (1997) discusses the importance of creating "literacy rich environments and interactions" (p. 202), but emphasizes that parents who did not have role-models themselves have a more difficult time supporting literacy development in their children. For instance, the results of one study that interviewed 157 parents from three different day care centers and pre-schools found that "parents developed their ideas about reading and interacting with their child mainly by recalling their past experiences as a child as well as by intuition" (p. 203). Although low SES parents might not have the role-modeling literacy skills to pass on to their children, studies have indicated that low-income parents want to learn how to read to their children and recognize the importance of education (Edwards, 1995).

Additionally, Morrow and Young (1997) encourage schools and family literacy programs to consider the cultural background of families and to focus on strengths within

the family rather than deficits. They emphasize that literacy activities are present in almost all homes, but that “literacy experiences practiced in some homes are not congruent with literacy activities encountered in school” (p. 14). For instance, many cultures focus on oral story-telling as opposed to actual book-reading. Although schools and other agencies must be respectful of parents who are not from the mainstream culture, and parents with less education, certain studies have revealed that parents who participated in family literacy programs learned how to be role models around literacy, learned about community resources, and were better prepared to collaborate with school and other program personnel (Delgado-Gaiten, 1990).

Finally, Scarborough and Dobrich (1994) reviewed the literature on the influence of parent-preschooler reading experiences in the development of language and literacy skills. Despite the commonly held belief that reading to preschoolers influences literacy development, their findings indicate that this hypothesis is not as powerful as originally expected. Instead, factors such as the amount of reading materials in the home have been more positively associated with pre-reading ability. Research has supported, however, correlations between SES and language ability, as discussed in the preceding section.

Scarborough and Dobrich (1994) reviewed seven research studies that examined the association between parent-preschooler reading frequency and literacy achievement during beginning schooling. They found that although there was an association between literacy outcomes and reading to preschoolers, it only accounted for 8% of the variance in achievement. Stronger associations were found with factors such as SES, early interest in literacy and pre-school language and literacy abilities.

In their conclusion, Scarborough and Dobrich highlighted their findings. First, they concluded that the amount of research on parent-preschooler reading is remarkably small, considering the widely held beliefs in this area; they found 31 published articles from 1960-1993. Second, they reported considerable variability of correlational samples from sample to sample. Third, the average magnitudes of the correlations were not as strong as the authors originally assumed. Fourth, the correlational results did not show that the quantity rather than quality of interactive book reading was better related to literacy or language development. Fifth, intervention programs geared towards increasing the frequency and/or quality of interactive book reading tended to be successful at least in regards to short-term growth. Although the overall results of this literature review did not overwhelmingly support the belief that reading to pre-school children “is the single most important activity for building the knowledge required for eventual success in reading” (Commission on Reading, National Academy of Education, 1985, p. 23, cited in Scarborough and Dobrich, 1994), it did support the belief that there is an association between reading to preschool children and the development of language and literacy skills.

### Purpose of this Study

The research on early literacy development supports the importance of early phonological awareness and letter-identification skills development. Not only are these skills crucial as preparation for beginning reading, the research concludes that when these skills are explicitly taught, children’s performance on early literacy skill development

improves significantly (Cunningham, 1990). Although many early childhood educators are incorporating phonological awareness training in pre-school and kindergarten curricula, parents have been underutilized in their role to explicitly teach their children these skills during literacy activities at home.

Children who are not exposed to print at home come to school less prepared for early literacy success. As both Teale and Purcell-Gates have shown, the variability of literacy exposure in the homes of low SES families is great, as is the print context, with exposure to print in the environment generally being higher than exposure to print during story-book interactions. Despite this, much of the research has focused on the importance of reading to children not only for the purposes of language development and concept development of print, but also as a way for children to be exposed to the sounds in the words that are being read to them. There is thus a need to further examine the effects of training on phonological awareness skill development during literacy activities at home, before children begin formal reading instruction.

To address these concerns, this study examined the effects of training for parents of kindergarten children with the primary objective of parents teaching phonological awareness and letter-identification through storybook reading activities in the home. Specifically, the study focused on three primary questions and several related questions pertaining to the integrity and acceptability of the intervention.

- The primary research questions were:

Question 1: On average, is the treatment slope and level for children whose parents participated in the intervention significantly different from the treatment slope and level for those participants in the control group on measures of Onset Fluency, Letter Naming Fluency, and Phoneme Segmentation?

Question 2: For the individual children whose parents participated in the intervention, how many experienced changes in slope of progress between baseline scores and intervention scores on measures of the Dynamic Indicators of Basic Early Literacy Skills?

Question 2A: For the individual children in the control group, how many experienced changes in slope of progress between baseline scores and intervention scores on measures of the Dynamics Indicators of Basic Early Literacy skills?

- In addition to child outcomes, several questions were addressed regarding treatment integrity and acceptability. The questions addressing the issue of treatment integrity were:

Question 3: To what degree did parents involved in the training perceive that they correctly implemented the teaching procedures during the home-based activities on measures of the Home Activity Sheets?

Question 3A: Did parents feel comfortable with the implementation of teaching procedures during the home-based activities on measures of the Home Activity Sheets?

Question 3B: To what degree did parents involved in the training perceive that they correctly implemented the corrective procedures during the home-based activities on measures of the Home Activity Sheets?

Question 3C: Did the parents feel comfortable with the corrective procedures during the home-based activities on measures of the Home Activity Sheets?

- The questions addressing the issue of treatment acceptability were:

Question 4: How did the parents involved in the training rate their satisfaction with the procedural aspects of each training, as measured by the Training Evaluation Forms?

Question 4A: How did the parents involved in the training rate their satisfaction with the procedural aspects and effects of the training, and their comfort in implementing the home-based activities, as measured by The Parent Satisfaction Survey?

## CHAPTER 2

### LITERATURE REVIEW

#### Definitions of Parent-Training

Although children do not begin their formal education until they are five years old, they have, in fact, received a very extensive education by their parents long before they reach school. Parents are constantly engaging in activities that implicitly or explicitly teach important skills to their children. For instance, children learn many of their skills through the role-modeling activities of their parents, and through countless parent-child interactions that encourage cognitive and social development. Although parents are not specifically trained for their role, training programs exist that teach specific parenting skills. For example, programs such as Parent Effectiveness Training (PET) have trained over 250,000 parents in skills such as active listening and conflict resolution (Fine, 1980). Other programs have focused on effective interventions for children with externalizing problems such as noncompliance, as well as teaching anger-management, and behavioral interventions such as reinforcement (Forehand & Kotchick, 1996).

Fine (1980) has defined parent training as a “systematic and conceptually based program, intended to impart information, awareness, or skills to the participants on aspects of parenting” (pp. 5-6). Although many parents do not formally participate in training programs, most parents are interested in providing their children with important life-skills. For many parents, this takes the form of parent-involvement in their child’s school. For instance, schools have a long history of collaborating with parents at open-

houses and parent-teacher conferences. School-home collaboration has received attention from administrators and policy-makers who vouch for its importance in the success of a student's educational achievement. Epstein (1987) comments on the importance of parent encouragement in a child's education. She says, "the evidence is clear that parental encouragement, activities, and interest at home and participation in schools and classrooms affect children's achievements, attitudes, and aspirations even after student ability and socioeconomic status are taken into account" (p. 120). In fact, Public Law 94-142 enforces parental involvement through due process for children in special education. Additionally, Public Law 99-457 provides services for children birth through two and includes the addition of the Individualized Family Services Plan which evaluates the level of child development, strengths and needs of the family with regard to enhancing the child's development, and direct services for the child and the family including support groups and parent education (McLinden & Prasse, 1991).

Epstein (1987) defines four types of parent-involvement, including basic obligations of parents, school-to-home communications, parent involvement at the school and parent involvement in learning activities at home. Basic obligations of parents include assuring health and safety, providing food and clothing, providing school supplies and building positive home conditions for learning. School-to-home communications include informing parents about school activities and children's behavior and achievement in school. Parent involvement at the school includes assisting teachers with lessons, or class trips and attending classroom-related activities. Parent involvement in learning activities at home includes developing a child's social and personal skills, and assisting with basic

and advanced skills education, and enrichment education. Parent involvement in learning activities at home is important for a number of reasons. When parents tutor their children, possible benefits for students include achievement gains in specific skills, better self-esteem as learners and increased interaction time with parents. Benefits for parents include awareness of their child's skills and positive interaction with their child, as well as the chance to directly participate in their child's education. Equally as important is the increase of a child's opportunity to practice specific skills. Greenwood, Delquadri & Hall (1984) have emphasized the importance of "opportunities to respond" in which a student who has many chances to respond to academic questions will have a better chance of success in the classroom. Unfortunately, children with learning difficulties are not given as many opportunities to respond as their academically successful peers. For these students in particular, parent involvement is a viable option.

### Evaluation Procedures for Literature Review

According to Wolfendale (1985), "parental involvement in children's reading is the most explored and fullest expression of a working relationship between parents and professionals" (p. 3). The literature review below will cover the main studies on parent-involvement and parent-trainings for reading to pre-school and school-aged children. As with any intervention, trainings need to be evaluated in a number of ways to assure success. Of particular importance is the issue of treatment effectiveness, treatment acceptability, and treatment integrity (Elliott, Witt & Kratochwill, 1986). Treatment effectiveness refers to the changes produced by the treatment; in other words, did the

treatment “work” or produce the desired outcomes? Unfortunately, without clear objectives, many studies are unable to truly evaluate the effectiveness of a program. Gains in a particular skill are often used as the outcome measure, with positive gains used as the criteria in determining program effectiveness, even when the type or amount of gain has not been specified. Research objectives should thus include a set criterion in gains for treatment evaluation and effectiveness purposes. Treatment acceptability refers to the participant’s feelings around an intervention. If the participant feels uncomfortable implementing an intervention, the intervention may not be implemented correctly, or at all. In the case of parent-training programs, where participation is voluntary, and motivation is high, treatment acceptability is usually high. Treatment integrity refers to the degree to which a treatment is implemented as intended. For studies involving parent-trainings, the important questions are: Did the training adequately teach a specific skill? Did the parents learn this skill and successfully implement it as intended? Was there an effect? If the answer to any of these questions is no, the success of the training is questionable.

As an overview, each article was evaluated in terms of the information it provided regarding training objectives and mastery, parent delivery of instruction to their children, and child outcomes of the training. A review of the seventeen articles included in this section in relation to these three domains is presented in Figures 1-3. A key that explains the criteria for review methods is presented in Appendix B. Three of the articles (Hannon, 1987; Hewison & Tizard, 1980 and Tizard, Schofield & Hewison, 1982), focused on parent-involvement rather than parent-trainings, and thus, the objective was to encourage

parents to listen to their children read. Another article by Pelligrini, Perlmutter, Galda and Brody (1990) was not summarized in the chart because the authors focused on examining interactions during book-reading, rather than manipulating the interaction or teaching a new skill.

As can be seen in Figure 1 most of the trainings incorporated a curricula developed by the researcher, although a few studies used published curricula. None of the studies provided information regarding data supporting the curricula. Training objectives were usually specified in the article, but there was a large variance in the specificity of the objectives. For instance, many articles stated training objectives in vague terms, such as, “the first session provided information about the skills involved in reading, ways to introduce a book, and to encourage good reading habits...” (Wilks & Clarke, 1988, p. 138). Other articles explicitly stated training objectives. For instance, Taverne and Sheridan (1995) specifically identified training objectives, including, “identify book components” (e.g., author, title, and story theme) (p. 46). The review of the articles includes information on how parental mastery was evaluated, and if mastery was attained. In some cases, it was implied that mastery was attained if a set evaluation system was in place, (e.g. if mastery was evaluated via practice with feed-back, it was assumed that practice occurred until mastery was attained.) Other authors made an explicit note that mastery was attained. All of the articles noted either implicitly (8 out of 16) that the researchers did teach the objectives to the parents. The other 8 articles explicitly stated this information.

Figure 2 examines issues of treatment integrity. Of the 16 articles reviewed, twelve included treatment integrity checks. However, two of the articles checked for integrity only after the post-test (Lugan, 1986; Wilks & Clarke, 1988). Treatment integrity was generally checked through home visits, phone calls, and tapes. Integrity was attained for all twelve of the articles that included a treatment integrity check, but once again, certain articles only implied the attainment (as indicated in the charts by “Yes\*”), whereas others explicitly talked about the attainment of the treatment integrity. Most of the studies did indicate that parents did teach their children the training objectives, although one study (Ellis, 1992) based this information on parent-reports only. In addition, one study, (Floyd, 1992) did not provide enough information to determine if the parents taught the training objectives to their children.

Figure 3 examines issues of outcomes. Most of the studies incorporated group measures and used published tests as outcome measures. In addition, most of the research studies incorporated a pre/post time-frame of measurement. While all of the articles noted that treatment was effective, the type of significance differed. For instance, ten of the articles noted statistical significance, whereas other articles noted social or clinical significance. Twelve of the articles identified elements of effectiveness. For instance, Leach and Siddall (1990) identified Direct Instruction and Paired Reading as the elements that proved to influence outcome measures. Finally, all of the articles noted that the trainings produced positive outcomes for the children.

In reviewing the articles on parent-trainings, certain limitations are apparent. Although many of the researchers do indicate specific training objectives and evaluation

for mastery criteria, others only provide sparse information, which promotes confusion for the reader reviewing and evaluating the research. It is possible that the authors intended for the articles to provide only a summary of the research and that more explicit information was available during the actual study. Nonetheless, it should be noted that those authors who provided specific information regarding training objectives and mastery criteria helped make review and evaluation of the research studies more accurate, decreased subjectivity, and contributed to an overall understanding of the research design and implementation. A more detailed review of the literature on parent-trainings and parent-involvement around reading follows Figures 1-3.

Figure 1

Review Information Regarding Curricula, Training Objectives and Mastery.

Study	Type of curriculum used. 1. published unpublished 2. developed by researcher developed by other 3. data to support it? (yes/no)	How was curriculum delivered? -written -verbal combination -other	Training objectives specified or identified? (yes/no)	Number of meetings and time for each meeting	How was parental mastery evaluated? e.g. practice with feedback	Was mastery attained? (yes/no)	Did the re-searchers teach the objectives to the parents? (yes/no)
Ellis, (1992)	Developed by researcher; no information regarding data	Combination plus games	Yes*	12 meetings, one hour each	Practice	Yes*	Yes*
Floyd, (1992)	Developed by researcher; no information regarding data	Combination	Yes*	One training	No information	Yes*	Yes*
Fry, (1985)	Developed by researcher; no information regarding data	Combination	Yes	Three at school (1-2 hours); two home-visits (30 minutes)	Home-visits w/ practice and feedback	Yes	Yes

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Figure 1 continued

<b>Hannon, (1987)</b>	Developed by researcher; no information regarding data	No information	Yes	Home visits through-out project	Reading logs to record frequency	Yes	Yes
<b>Heath, (1985)</b>	Developed by researcher; no information regarding data.	Verbal	Yes	Two at school (thirty minutes each); 15 minute monitoring sessions bi- weekly	Practice	Yes	Yes
<b>Hewison &amp; Tizard, (1980)</b>	None-parent involvement	No information	Hear children read (frequency)	No information	No information	No infor- mation	No infor- mation
<b>Jungnitz, (1985)</b>	No information	No information	No	No information	No information	Yes*	Yes*
<b>Leach &amp; Siddall, (1990)</b>	One published; three by researchers; no information regarding data	Verbal and written	Yes	One training for 1½ hrs.	Supervised role-plays	Yes*	Yes*
<b>Lugan, (1986)</b>	Developed by researcher; no information regarding data	Verbal	Yes*	Four work- shops	Tape- recordings	Yes*	Yes*

Continued next page

Figure 1 continued

<b>Pelligrini, Perlmutter, Galda &amp; Brody, (1990)</b>	N/A (tappings of parent-child interactions)								
<b>Rubert, (1994)</b>	Unpublished; no information regarding data	No information	Yes	3 work-shops	Throughout via tapes	Yes*	Yes*		Yes*
<b>Taverne &amp; Sheridan, (1995)</b>	Published video-training; no information regarding data	Video combined with written information	Yes	Initial visit; one individual mtg; 5 trainings for one hour each	Yes; role-plays with coaching	Yes	Yes		Yes
<b>Tizard, Schofield &amp; Hewison, (1982)</b>	No specific training (parents listen to children read)	No information	Yes; listen to children	Two-three home-visits per term	Observations with feed-back	Yes (listen to children read)	Yes		Yes
<b>Ullery, (1992)</b>	Developed by researcher; no information regarding data	Verbal and video	Yes	Three trainings, 20 minutes each	Demonstration	Yes	Yes		Yes
<b>Wedel &amp; Fowler, (1984)</b>	Developed by researcher; no information regarding data	Combination with teacher-modeling	Yes	12-14 sessions, minutes each	Yes; through tapes and feed-back	Yes*	Yes*		Yes*

Continued next page

Figure 1 continued

<b>Whitehurst, Arnold, Epstein, Angell, Smith &amp; Fischel, (1994)</b>	Researcher developed (Dialogic reading); data to support it	Through videotape	Yes	2 sessions (20 min.; 30 min.)	Role-plays with feed- back	Yes	Yes
<b>Wilks &amp; Clarke, (1988)</b>	Researcher developed for encouraged training; unpublished for trained group	No information	Yes	2-4 sessions, one hour each	Yes; Practice w/ feed-back	Yes*	Yes*

Figure 2  
Review Information Regarding Parent Delivery of Instruction to Their Children.

Study	Treatment Integrity Checks? Yes/no	Integrity attained? Yes/no	Did parents teach children the objectives? Yes/no
Ellis, (1992)	No	No	Yes, but based on parent report
Floyd, (1992)	No	No	Unclear
Fry, (1983)	Yes	Yes	Yes
Hannon, (1987)	Yes (home visits and logs)	Yes*	Yes
Heath, (1985)	Yes	Yes	Yes
Hewison & Tizard, (1980)	No	No	No
Jungnitz, (1985)	Yes (follow-up home visits)	Yes	Yes
Leach & Siddall, (1990)	Yes (phone calls and home visits)	Yes	Yes
Lugan, (1986)	Yes, but after the post-test	Yes*	Yes*
Pelligrini, Perlmutter, Galda & Brody, (1990)	N/A		

Continued next page

Figure 2 continued

Rubert, (1994)	Yes (tapes)	Yes*	Yes*
Tizard, Schollfield & Hewison, (1982)	Yes (reading logs and observations)	Yes*	Yes*
Ullery, (1992)	No	No	Yes*
Whitehurst, Arnold, Epstein, Angell, Smith & Fischel, (1994)	Yes* (reading logs for frequency, but no checks for correct implementation of assignments)	Yes*	Yes
Wilks & Clarke, (1988)	Yes (tapes, but only checked at end of study to determine frequency)	Yes	Yes

Figure 3

Review Information Regarding Child Outcomes of the Program

Study	Outcome effects measured by: -group -individual -both	Types of outcome measures: -CBM Published test -Other	Time-frame of measurement: -Pre-post -Pre-post-follow-up -Other	Was treatment effective? If yes, -Statistical significance -Clinical significance -Social significance	Are elements of effectiveness identified? If yes, describe	Did the training produce positive outcomes for the children? (yes/no)
Ellis, (1992)	Group	Published	Pre/post	Social significance	No	Yes
Floyd, (1992)	Group	Created by researcher	Pre/post	Social significance	No	Yes
Fry, (1985)	Individual	Published	Pre/post with reversal design	Statistical	Yes; token reinforcement and practice of sight-words	Yes
Hannon, (1987)	Group	Published	Pre/post	All three	Yes; listen to children read	Yes
Heath, (1985)	Group	Published	Pre/post	Statistical	Yes; paired reading techniques	Yes

Continued next page

Figure 3 continued

Hewison & Tizard, (1980)	Group	Published	Pre/post	Statistical	No	Yes
Jungnitz, (1985)	Group	Published	Pre/post	Statistical	Yes; paired reading techniques	Yes
Leach & Siddall, (1990)	Group	Published	Pre/post	Statistical	Yes; direct instruction and paired reading	Yes
Pelligrini, Perlmutter, Galda & Brody, (1990)	N/A					
Rubert, (1994)	Individual	Case studies	Case studies (interviews, surveys, tapes)	Social	Yes; echo-reading and independent reading	Yes
Taverne & Sheridan, (1995)	Individual	Published	Pre/post with follow-up	Statistical	Yes; labeling, discussing pictures, pause to question child, etc.)	Yes
Tizard, Schofield & Hewison, (1982)	Group	Published	Pre/post	All three	Yes; listen to children read	Yes

Continued next page

Figure 3 continued

<b>Ullery, (1992)</b>	Group	Surveys	Pre/post	Social	Yes; accompany children to library, model enjoyment of reading, increase awareness of importance of reading to children	Yes
<b>Whitehurst, Arnold, Epstein, Angell, Smith &amp; Fischel, (1994)</b>	Group	Published	Pre/post with follow-up	Statistical	Yes; assigned questions during reading	Yes
<b>Wilks &amp; Clarke, (1988)</b>	Group	Published	Pre/post	Statistical significance for reading comprehension and mothers' reading behaviors	Yes; reading tutor behaviors	Yes

## Organization of Literature Review

The upcoming review of the literature on parent-training/parent-involvement in reading is divided into three groups. The first group focuses on parent-trainings for parents of pre-school children or pre-readers. These trainings generally assume interactive book-reading will involve the parent reading to the child, asking questions, and focusing on pictures or print awareness. The aim of much of this research has been on language development and gains in vocabulary, or behavior or attitude changes in exposing young children to print and reading activities. In those cases where the goal of the intervention was to promote language development, data collection tended to focus on the number and types of questions and utterances between parents and children during book-reading activities. In the cases where the goal of an intervention was to promote more frequent or effective literacy experiences for pre-readers at home, data collection tended to focus on the frequency of book-reading and the type of support parents provided to their children during reading activities.

Except for one study that examined the effects of a whole language training for parents, the research has not focused on instruction per se. In fact, despite the fact that research has concluded that phonological awareness and letter-identification are crucial skills for pre-readers to develop, only one study specifically examined the effects of this type of parent-training. Similar to some teachers' beliefs that parents do more harm than good when they act as reading instructors to their children, certain researchers have noted that phonological training for parents is ineffective, and possibly harmful if it causes high levels of frustration for either the child or parent.

Unlike phonological training and letter-identification training, a focus on language gains is considered more practical and effective for parent-trainings and interactions around book-reading. One reason for this is that parents are already coaching their children in language activities in informal ways, and thus a language-based activity within the context of reading is already part of the parent's repertoire. Based on literature that concludes that exposure to print and modeling of reading are both crucial pre-literacy factors, it makes sense that many of the trainings for parents of pre-school children focus on increasing the frequency of reading activities.

Research in the second group describes trainings that provide parents with tools for listening to their children read. The children in these studies have already received formal reading instruction in school, but tend to have reading problems. The idea behind this type of training stems from the long-standing belief among educators that hearing a child read is a way to assess reading attainment. Reading aloud is also considered "a precursor to later skill stages, including that of silent reading" (Wolfendale, 1985, p. 37) and provides children with the opportunity to self-correct, an important reading skill.

Aside from helping a child self-correct, listening to a child read increases the amount of praise and responses from the listener. This is especially important for children who are behind in reading and may not receive an appropriate amount of engaged time with the teacher at school. Research has shown that responding to children via praise for correct readings and attempts, or to correct and encourage, is crucial for reading development, and that poor readers might receive less of this type of teacher-engagement than good readers (e.g. Adams, 1990). Providing this type of engagement from parents is

important because children are motivated when they are engaged with adults, particularly their parents. This type of training is also cost and time efficient, (parents tend to spend 15-20 minutes a day listening to their children read), and can complement the school curricula easily. The research has supported reading gains for children whose parents have participated in this type of training, and has been particularly supported by special-educators because of its positive effect on low-achieving readers.

The third group of parent-trainings in the literature focuses on specific coaching strategies and instruction for children who have already received formal instruction. A common training-method has focused on Paired-Reading, which is a two-step process that involves simultaneous reading of text with a child followed by independent reading. This strategy has been deemed useful for its focus on corrective strategies. Other studies have compared trainings for Paired Reading, Pause, Prompt and Praise and Direct Instruction. Still others have trained parents in specific coaching behaviors such as delayed intervention rather than direct prompts and increased use of praise. Most of the trainings have not utilized a reinforcement model, other than the natural reinforcement of quality time with parents and an increased enjoyment of reading, although at least one study specifically focused on a token reinforcement system with positive effects.

The parent-feedback from most of the studies has been positive and has included a better relationship with the school, a better relationship with the child around reading activities, and an increase of the importance of modeling reading activities and providing children with more literacy activities as positive gains, in addition to the reading gains made by the child. Clearly then, parent-training around joint reading activities with

children is one innovative method that has enjoyed success. Although many of the study results are not generalizable, they are positive and should encourage future research, particularly for parents of beginning and young readers, since prevention and not remediation has received support in the reading literature.

### Trainings for Parents of Pre-Readers

A number of studies have examined the effectiveness of joint picture book reading between parents and children. Whitehurst, Arnold, Epstein, Angell, Smith & Fischel (1996) examined the effects of an interactive book reading program for low income pre-school children. The first goal of this study was to respond to two limitations of a previous study evaluating dialogic reading techniques with Mexican pre-school children. The first limitation was that a doctoral student in psychology performed the adult reader tasks, leaving unanswered the question of whether less well-educated adults could be trained in such a procedure. The second limitation was that readings did not take place in group settings, an impracticality, since dialogic reading in a pre-school would best be done in small groups. The second goal was to develop an interactive book reading intervention for day-care, preschool and Head Start settings.

In this study, children were read to in small groups and both parents and teachers were involved in the readings. Books were given to the parents by the day-care centers to ensure appropriate level of difficulty. It was hypothesized that children who were read to by teachers would show greater increases in language ability than children in a control group, and that children who were read to by teachers and parents would show even

greater increases because of a greater frequency of shared reading experiences. A second hypothesis based on previous research was that effects would be stronger on measures of expressive language than on receptive language measures.

Seventy-three three year olds from low-income families and five day-care centers participated in the study. Half of the children were African-American, a quarter Hispanic and a quarter European-American. Compared to children from middle-class families, these children had less than half the experience with book reading in the home. Most of the parents were high school graduates, and ninety percent were native English speakers. As measured by standardized tests, the vocabulary and expressive language skills of the children in the study were significantly below average at the beginning of the study. The five day care centers rated at or above average on all but one sub-scale of the Early Childhood Environment Rating Scale, a 37 item scale that is scored from 1 (inadequate) to 7 (excellent) by the rater. The authors considered the educational background of the staff to be above the national average.

The children were randomly assigned to three groups, a school reading group, a school plus home reading group and a control group. The children in the school reading group participated in dialogic book reading in groups of five with their teacher for ten minutes each day. Twelve books were available for the reading sessions and were chosen for illustrations that would introduce new vocabulary words and provide information about the plot. Books that had fewer illustrations and relied on straight adult reading were not used because of the lack of opportunity for active participation from the children. Teachers were trained in dialogic reading methods via a videotape training.

Characteristics of Dialogic Reading include “increasing the frequency of adult language input, using expansions, providing feedback, and following the interests of the child (Whitehurst, et. al., 1996, p. 686). The tape presented two assignments along with the rules of dialogic reading and included an example of adult-child reading. Both assignments included goals for the child, (e.g. noun labels, attribute and function labels, turn- taking, multiword expression and story and picture structure), and procedures for adults, (e.g. ask who, what and when questions, not yes-no questions, follow answers by the child with questions, repeat what the child says, help the child with answers as needed, praise and encourage, follow the child’s interests, ask open-ended questions, expand what the child says, and have fun). Following the appropriate reading, an inappropriate adult-child reading was shown and the teachers were asked to comment on the reading and provide suggestions for what the reader should have done differently. After the tape, teachers participated in a role-play with the trainer and received feedback.

Children in the school plus home reading group received the same reading conditions at school as the children in the school reading group. Parents of these children were trained in dialogic reading with the same videotaped training program as the teachers. Similar to the teacher trainings, the sessions included two assignments and were conducted three weeks apart. Parents were given three books for each assignment and were asked to read to their children daily. The books were the same as those used by the teachers. Children in both experimental groups were read to either by their teacher or a classroom aide, while the other children engaged in various activities. Parents and

teachers completed daily logs to record when the reading occurred, the name of the book and the name of the reader.

Children in the control group played in groups of five or less for 10 minutes daily. One of six toys was made available to the children daily, and the children were encouraged to play cooperatively. These toys were not made available to children in either of the experimental groups, and the books that children in the experimental groups read were not made available to children in the control group.

During the pre-intervention phase, children were administered the Peabody Vocabulary Test-Revised, the Expressive Sub-scale of the Illinois Test of Psycholinguistic Abilities, and the Our Word and One Word. These tests were chosen because they assessed vocabulary and expressive abilities which dialogic reading purports to influence. Parents also completed the Family Reading Survey, which provides information about reading practices and beliefs in the home environment.

Except for different forms on the PPVT-R and the One Word, posttests remained the same, and were administered after the six-week intervention phase. Follow-up testing occurred six months after the post-testing and except for a different form for the PPVT-R and the elimination of Our Word, included the same tests as were administered during the post testing.

The results indicate a statistically significant effect on expressive language for children in both experimental groups during posttest and follow-up phases. Children in the experimental groups performed higher on the expressive vocabulary tests than children in the control group, and gained double the number of words between the pre

and post test phase than children in the control group. For the One Word Test, mean scores for the control group were 84.88 during pre-test, 85.18 for the posttest and 88.07 for the follow-up, as compared to scores for the school group of 84.31, 88.12 and 91.17, and school plus home scores of 85.50, 92.32 and 91.14. Gains continued to be present on the One Word six months after the intervention phase. Positive correlations included the number of books in the home, child's enjoyment of shared reading, while negative correlations included ear infections.

The results of this study were positive, especially in light of the fact that they addressed the two limitations from a prior study, as previously mentioned. It was found that low-income parents who are not highly educated are able to effectively read to their children, and that Dialogic reading is a successful tool for small-reading groups in day-care settings as well as for one-to-one parent-child situations. One effect of joint-reading activities between parents and pre-school children, that of later success in reading endeavors was not answered. Research has indicated that joint reading activities has positive influence on beginning readers, which warrants a future long-term study on the effects of Dialogic reading between parents and children. This study was particularly strong in that it used a control group and added a follow-up component to its design. Treatment integrity was maintained in this study in a number of ways. To ensure that parents and teachers understood the components of Dialogic reading, trainers asked for critiques of an inappropriate adult-child book reading and provided feed-back during role-plays. The use of one videotape as a training guide also increased the likelihood that both

parents and teachers were being exposed to the same techniques and the likelihood that these techniques were then correctly implemented.

Lujan (1986) examined the effects of a parent intervention program that taught specific parent involvement skills in literacy concepts. The specific question, "What is the effect of informed parent training in literacy concepts on children's performance on environmental print awareness and book handling tests" (p. 5) was tested on a group of low-income families with pre-school children. The objectives of the study included (a) noting changes in parental attitudes and behaviors, (b) recording specific child behaviors during the pre-test, (c) classifying these child behaviors as primarily cognitive or psychomotor in orientation, (d) describing the occurrence and type of behavior across pre and post-testing, (e) comparing the pre-and post-test scores of each child on each sub-test within each instrument, and (f) evaluating both statistical and qualitative significance of each child's performance to determine the effect of parent training in literacy concepts and practices" (pp. 5 and 6).

Four workshops were conducted in which specific literacy concepts were presented to parents of children aged three to five years. Concepts included the reading process, environmental print, literacy games and writing. Since English was not the first language of many of the parents, a translator was present at all of the workshops, and multi-language materials were available. Material was presented through presentations, role playing, question and answer sessions and discussion groups. The workshops were tape-recorded and the transcripts were analyzed to determine the types of parental questions and behaviors.

To assess the effects of parent training, pre- and post-tests of the Print Awareness Test and the Book Handling Test were administered and observations of child's attitudes, behaviors, and performance were recorded by observers. Additional home-visits were scheduled after the post-test phase so that parents could talk about and implement changes in the family environment that might have occurred as a result of the training. Parents also completed journals that documented the changes at home. The information from each assessment was compiled in a case-study format for each child.

The Print Awareness Test showed print in three conditions, a two-dimensional context (e.g., a candy wrapper), photocopies of the two-dimensional context print, and a set of manuscript cards. Thus, for condition one, the child was exposed to print in a familiar form, with the presence of color, size and shape representative of a familiar print environment. In condition two, (the photocopies), the absence of color accounted for the statistical insignificance on t-tests more than the absence of shape or size. Condition three resembled the type of print children are frequently exposed to at school. The authors point out that cultural and linguistic differences in low SES children might minimize parent's teaching of the type of print in condition three. In this study, some parents did teach their children letter-identification, but the children had a difficult time with this in condition three because of the decontextualized nature of the print.

Results of the Book Handling Test revealed that parent training had an effect on directionality and letter knowledge. Items that assessed these skills were straightforward and could be answered by the child through pointing, tapping, etc. and were also developmentally appropriate for children in this age-group. Likewise, these questions,

(e.g., “show me the C”), were factual and could easily be taught to parents through demonstrations during the parent trainings. The training proved ineffective in terms of re-telling skills, such as “what” questions. This was attributed to the fact that this type of knowledge was more abstract than the letter-identification skills, and was more difficult to teach parents. Parents perceived the letter-identification and directionality tasks as within their capability, but were not successful in incorporating the re-telling strategies at home.

Parent training had a positive effect on child’s behavior during reading. For example, children were more focused on stories and parent instruction than before the training, and were able to self-direct and remain focused on the story. Additionally, all of the children in the study increased the quantity of response speech and the quality of informative comments on the test items.

Changes in parent behaviors were grouped by behaviors that promote literacy, behaviors that affect the child’s literacy attitude, and behaviors that create a sound parent/child relationship. Behaviors in the first group included a deliberate attempt by the parent to involve the child in stimulating activities involving print, such as acquiring new books for a child and displaying children’s literacy efforts, such as drawings or writings. Additionally, parents became more aware of literacy tools such as pens and paper and some of the parents began to take these materials on outside excursions, such as shopping trips. Behaviors in the second group included encouraging children to play in literacy and creative activities, participating in such activities with children, and providing positive responses and assistance to children. Behaviors in the third group included more positive

interactions, interest in the child's activities, and sincere responses to the child's beginning attempts.

Finally, workshop effects, as reported by the parents, included an increased awareness of the tasks children face in learning how to read. Parents asked their children more questions about drawings and scribbles and began to appreciate their child's literacy efforts. Additionally, some parents started reading more themselves, which added positive role-modeling around literacy for their children.

Although this study did prove effective in terms of changing parental beliefs and attitudes towards interacting with children around literacy activities, certain flaws exist in the design and methodology. Of particular note is the fact that no sample size is given in the study. The study utilized a pre-test/post-test design, but did not give results of either test to show the exact effects of the training. For instance, although it is noted that certain skills improved, such as directionality, it is unclear what gains were made from the pre-test to the post-test conditions. Likewise, it was unclear what strategies were actually taught in the parent-trainings. For instance, "reading process, environmental print, literacy games and writing" are all undefined in the study and it is unclear what new skills the parents actually used when reading to their children. There is also no description of the types of books parents read with their children, or frequency or duration of book-reading activities. Certain children might have had more interactions with their parents around books than others, which could effect the assessment process and skew test scores.

In order to have confidence in the results of this study, a replication would need to cite more information regarding the sample, the procedure for implementing the training,

and pre and post test scores for comparison. More details regarding the specifics of the parent training are also necessary to make conclusions about the effectiveness of the training and the specific skills that the training incorporated.

In one of the few available instructional trainings, Floyd (1992) examined the effectiveness of a parent-training for reading to kindergarten children using a whole language approach. The whole language approach teaches the “listening, speaking, reading and writing component of the language process as a whole rather than a segregated process” (p. 11). Twenty-seven parents and their kindergarten children participated in the project. Assessment tools included the Kindergarten Parent Survey of Whole Language, which accessed information regarding children’s attitudes towards reading, parents knowledge of whole language approach, parental attitudes towards using a whole language approach with their children after an initial training, and the ability to judge the quality of children’s literature. Results showed that 96% of the parents believed that reading to their children was important and that 84% of their children liked to be read to. Only 20% of the parents indicated that they had an understanding of the whole language approach, and 64% of the parents stated they would feel comfortable using whole language techniques at home after a training. Sixty-seven per cent of the parents felt that they were able to judge the quality of children’s books.

The objectives of this study were: 1) after a Whole Language parent orientation session and ten weeks of at-home experience with Whole Language techniques, 80% of the target group parents will be able to identify Whole Language techniques as measured by the Kindergarten Parent Survey of Whole Language, 2) 80% will feel a positive level

of enjoyment or comfort using Whole Language techniques at home and 3) 90% of the parents will be able to critically judge the quality of children's literature books and the book's suitability for instructional use in the Whole Language setting. Additional assessment tools included a Parent Response Form which helped parents evaluate the quality of books and an Attitudinal Survey on Whole Language Reading Program that elicited information regarding the enjoyment of the program for both the parent and the child and the amount of time needed per week to implement the program.

During the training, Whole Language techniques were taught to the 27 parents, and a handbook outlining Whole Language methods was distributed. After the orientation, a book bag was sent home each week for ten weeks which included, one book, a whole language direction sheet, questions and information for the book, a portfolio folder, paper, and a parent-response form. Directions for reading included reading the book twice, once for enjoyment and once to generate a discussion, a drawing assignment in which the child draws a picture and the parent and child write a sentence about the picture, and a second reading assignment in which the parent and child read the writing/drawing response of a child who had previously read the book. After each book, the parents completed the Parent response Form to practice evaluating children's books. At the end of the ten-week program, each parent completed the Kindergarten Parent Survey on Whole Language to assess the success of the program, and the Attitudinal Survey on Whole Language Reading Program which was used to evaluate the at-home reading program. Additionally, each morning for fifteen to twenty minutes the teacher

and children discussed a specific book, shared their drawings, or listened to the teacher read a book.

Before the training and implementation of the project, only 20% of the parents had knowledge about Whole Language techniques as compared to 85% on the post-test. Question #4 on the Kindergarten Parent Survey asked the parents about their level of comfort in using the Whole Language techniques at home. Sixty-three per cent of the parents said they would feel comfortable using this technique after a training on the pre-test, and 100% said that they felt comfortable on the post-test. Question #5 of the survey revealed that after the training 93% of the parents felt they were able to critically judge the quality of children's books, and the book's suitability for using a Whole Language technique, as compared to 67% before the intervention.

This training proved effective in helping parents coach their children in a whole language approach. However, a number of problems with the study are evident. The surveys used were designed by the researcher for the purpose of the study, and it is unclear how valid or reliable they are. Although parents stated that they felt comfortable using the whole language approach after the training, no observations of actual implementation occurred during joint reading activities. It is therefore possible that parents were incorrectly using the whole language approach at home. Treatment integrity in this design was therefore jeopardized because evaluation procedures were sketchy in regard to the teaching of the whole language approach to parents, and the parent's implementation. To provide further confidence in the whole language technique, it would be useful to include a control group as well as interesting to compare this type of training

with a more phonologically based approach due to the ongoing debate between proponents of these two techniques. Finally, although parents in this study felt comfortable with this type of instructional involvement, it is unclear how effective this training would be for a more diverse group of parents, or parents of children exhibiting pre-reading difficulties.

Taverne and Sheridan (1995) examined the effectiveness of a parent training aimed at increasing the duration, frequency and quality of interactive book reading between parents and their children. The intervention goal of the parent-training was to increase interactive book-reading in families of low SES. The research questions included: 1) "Will parent-training in interactive book reading techniques result in increased quantity and quality of reading interactions between parent and child?" 2) "Will target children's measures of receptive vocabulary increase following the practice of interactive book reading?" and 3) Will parents consider skills training acceptable and effective?

Subjects were recruited from an Even Start early intervention program and lived in a low SES and urban neighborhood. The mean age for mothers was 28 with an average reading level assessed at the fourth grade using the Test of Adult Basic Education (TABE). The children were five females and one male with a mean age of four years and six months. Materials for the study included a reading log, a reading summary, books, and audio and visual demonstrations. The reading log was a seven-day form divided into morning and afternoon times. Each parent completed one log per week and wrote down the dates and times that they participated in interactive reading with their children. The reading summary was a nine-item questionnaire that asked parents to rate on a four point

scale their perceptions of their book reading with their children. This form was used to analyze the treatment integrity of the research and was completed for each reading during the first two weeks of the study and once a week thereafter. One book was given to the parent for each week of the study. The books were 20-30 pages in length, and were chosen based on their pictures, uncomplicated language and multicultural topics. Additionally, the books were chosen with the parents' reading levels in mind, (e.g. a fourth grade reading level). Toward the fourth week, parents observed a videotape of a parent reading to her daughter that modeled specific interactive techniques including awareness of book structure and print and vocabulary development, as well as ignoring certain child behaviors and redirecting.

Independent variables in the study included interactive book reading and parent-training. Interactive book reading included a parent-child activity where the parent pointed out the main parts of a storybook, labeled and discussed pictures, read the story to the child and questioned the child about content understanding. During each reading session, the parent was instructed to teach identification of book components, such as author and title, and identification of print characteristics. The goals of the training were broken down into a nine-code system that categorized parent statements and child statements. A statement was defined as the spontaneous speaking turn of the parent or the child. For example, a comment from the parent answered by a response from the child would elicit two codes.

Parent training occurred over a seven-week period. An initial home visit elicited information regarding current and past family reading habits and a review of the study.

Baseline data were collected using logs and audiotaped recordings. Seven to ten days after the home visits the investigators and parents met to discuss the logs and set up a schedule for interactive book-reading. Five small skills training groups met for one hour on a weekly basis. During the trainings logs were reviewed, the book for the week was distributed, a reading demonstration of various techniques was given and parents participated in a role-play activity.

The dependent variables included transcript reviews, receptive vocabulary, self-reports, treatment acceptability and treatment integrity. For the transcript reviews parents audiotaped their reading interactions with their children during the baseline, treatment and follow-up phases. Due to subject resistance to baseline conditions, only one week of data were available. Audiotapes were coded and inter-rater agreements for 40% of randomly selected transcripts was .87. To determine receptive vocabulary, the Peabody Picture Vocabulary Test-Revised (PPVT-R) was given to the children before and after the intervention phase. The time between pretest and posttest administrations was approximately six months. Subjects reported the minutes read per day and the days read per week during the baseline, treatment and follow-up phases. Treatment Acceptability was assessed through the mother's completion of the Behavior Intervention Rating Scale (BIRS) during the follow-up phase. Treatment integrity was assessed through the reading summaries and reviews of the transcripts.

An A-B follow-up with replication design was used for this study. Each parent-child dyad received the same intervention and data included one week of baseline, five weeks of treatment and one week of follow-up. The results showed that during treatment,

parents were more regular in their book-reading interactions at home, targeted a regular time and place for book-reading to occur, and four of the subjects showed a statistically significant increase in the amount of interactive book-reading. For four of the six subjects, the total minutes read per week increased from the onset of treatment and subjects understood and implemented training strategies at home. The transcripts of the audiotapes revealed strong qualitative gains in communication between parents and children during reading activities. During the treatment phase, parents made use of the story to encourage verbal interactions with their children, and were able to sustain their children's attention to the reading tasks. Three months after intervention, an average gain of 15.6 points on the PPVT-R was noted, and five of the six subjects scored within the average or above-average range, as compared to one subject scoring in the average range before treatment. Although regression toward the mean is a possibility for increased scores, the authors note that the Even Start program is not an intensive intervention program, and that activities for this study took place after school for two days a week.

This study was well designed; nevertheless, certain limitations exist that have been acknowledged by the authors. The study originally intended to use a multiple baseline across subjects design, but an AB with replication design was substituted because of problems with subject attrition and noncompliance with extended baselines. A problem with this type of design is that there is no return to baseline, and thus it is impossible to conclude that changes in behavior are a result of the intervention. Threats to internal validity include history, maturation of subjects and repeated testing. The children were all involved in school experiences during the follow-up phase which determined growth of

receptive vocabulary. Thus, it is possible that gains were a result of the school experience and not the actual parent-training. The PPVT-R was administered three times within a six month time span between testing, and thus an increase in scores could be attributed to repeated testing. Since the mean age of the children was 4.6 years, change could be attributed to normal development and growth which occurs at a rapid pace for young children. Finally, as with any study that employs tape-recording of subjects, it is quite possible that subjects responded in socially acceptable ways that might be different from their natural responses. On a positive note, this was one of the only studies that considered parental evaluations in terms of skills training and effectiveness, thus enhancing the treatment integrity of the study.

Pellegini et al. (1990) examined reading activities between black Head Start mothers and their children. Mothers in this study did not participate in a specific training, but were asked to read with their children and were supplied with specific books. The participants in this study were from low SES families with mothers completing an average of 10.92 years of schooling. Thirteen Head Start mother-child dyads participated in the study. The first aim of the study was to “examine the extent to which the joint reading strategies used by LSES black mothers with their Head Start children varied as a function of text genre (narrative and expository) and text format (traditional children's narrative and expository books and more familiar newspaper narrative cartoons and newspaper toy advertisements” (p. 444) and “mothers’ teaching strategies with their children around text”. The authors hypothesized that the mothers in this study would have a higher frequency of metalinguistic verbs and psychologically high-distance strategies in the

expository and familiar formats than in the narrative and traditional formats. This hypothesis was based on research that shows that “the highest level of performance can be elicited from subjects when they are exposed to culturally familiar stimuli in a meaningful context” (p. 444). Since mothers had more experience with newspapers (the familiar format) than children’s books, (the traditional format), it was thought that mothers would be more competent with the familiar format and use more of the teaching strategies in this format.

The second aim of the study was to assess the effectiveness of mothers’ teaching strategies in helping their children with literacy tasks. Using the zone of proximal development model which assumes that mothers adjust their level of interactions with their children’s task competencies, reading competencies were measured based on children’s initiated interactions with their mothers, children’s responses to mother’s elicitations and related book stimuli to external stimuli. It has been shown that middle class mothers, for instance, initially use high-level interactions with their children and lower the task-level if the child cannot meet the initial high-level task request. This study examined the extent to which Head Start mothers lowered task-requests after the child was unable to respond to a high-level request.

Mothers were video-taped reading to their children for nine weeks; an additional week was spent establishing rapport with the dyad in an observational session. Books were supplied to each dyad that emphasized genre (narrative and expository) and format (traditional children’s books and comics or newspaper toy advertisements). Traditional children’s books included *The Tale of Peter Rabbit* and *The Little Red Hen*; the

traditional expository books included *Who Lives in The Zoo* and *My First Book of Words*. Narrative familiar texts included the comic strips *Snuffy Smith*, *For Better or For Worse*, and *Hagar*; expository familiar texts included toy advertisements from newspapers.

Measures included vocabulary scores on the Peabody Picture Vocabulary Test, mothers' teaching strategies and children's behavior. Mothers' teaching strategies were examined from transcripts of videotaped sessions; specific strategies were use of high, medium, and low mental demands and mothers' use of metalinguistic verbs. High-demand questions included evaluations, (e.g., "is this possible?"), cause-effect inferences, (e.g., "why did it happen like this?") and conclusions, (e.g., "why'd this end like this?"). Medium-demand strategies included sequencing, (e.g., "first, do this"), reproduction, (e.g., "say it like me"), and clarification (e.g., "which go together?"). Low-demand strategies included labels, (e.g., "this is a can"), describe (e.g., "it's real big"), and demonstrate (e.g., "I'm reading this now"). Metalinguistic verbs were process verbs (e.g., "tell me the story"), or contrasting process verbs (e.g., "geese don't talk"). Children's language (utterances) were coded from videotaped transcriptions and included initiation utterances (e.g., book-relevant questions), reference to external stimuli (e.g., relating a word form the text to a real object or experience in the child's life) and book-relevant responses to mother (e.g., answering a book-related question).

The results of the study showed that traditional expository and familiar expository text yielded more teaching strategies than familiar narrative and traditional narrative text. The traditional expository and familiar expository text elicited more of the four strategies (high, medium, low demand and use of metalinguistic verbs) than the traditional narrative

and the familiar narrative. Children's participation was greater during expository text readings than narrative-text readings. Mother's use of low-demand strategies and children's initiations were interrelated in the traditional expository context and use of high-demand strategies and metalinguistic verbs was related to initiations in the familiar expository context.

This study differed from many of the other parent-training studies in that parents were asked to read to their children, but were not taught specific reading strategies. The information gained however is important in its suggestion that low SES mothers, like middle class mothers use teaching strategies that consider their child's level of competence during book reading. As with many of the other studies that observe mother-child dyads, one limitation of this study was its relatively small sample. Another limitation, which has also been cited in many of the other studies concerns the effect of the experiment itself. Data were analyzed from videotapes, and thus it is impossible to determine if the mother-child interactions were typical or a result of desired effect. Likewise, the mothers all volunteered for this study which perhaps affects selection bias and undermines the generalizability of the results to other low SES mothers. It is possible that the mothers who volunteered were mothers who already used appropriate strategies when reading with their children, or were motivated to read frequently to their children, and consequently had more practice.

Ullery (1992) studied the effectiveness of literacy training workshops intended to increase the awareness and frequency of home literacy activities. Ninety kindergarten children, fifty-eight of whom were from low socioeconomic families and sixty-three of

whom were from minority backgrounds participated in the study. The author's objectives included: 1) 45 out of the 58 low-income parents would increase their awareness of the importance of reading to their children, 2) 60 out of the 90 parents would accompany their children to the library on a school field-trip, 3) 65 out of the 90 children would have a parent read them a story daily for eight weeks, 4) 55 of the 90 parents would model literacy behaviors by reading a book or a newspaper for pleasure in the presence of the child at least twice a week and 5) 55 out of the 90 families would receive a library card.

To assess the first outcome, a pre and post-survey was completed by the parents that documented their awareness of the importance of reading to their children. The second outcome assessment was an attendance sheet for a trip to the library. For outcome three, parents completed an open-ended survey in which they answered questions about the number of books read in eight weeks. Pre and posttests were given to parents to determine how often they read in front of their children. For outcome five, parents submitted an application for a library card to the teacher.

A parent-training workshop emphasizing the importance of reading at home and providing suggestions for reading aloud techniques as well as modeling and practice was conducted. Additionally, books were sent home daily, and parents had access to novels, magazines and other written material at a media center located at the school. Children were allowed to check out books from the school library after the eight-week intervention period, and a training at the public library was held for parents and children.

Parents completed a family literacy survey that assessed the home print environment, and the frequency of interactive book reading. The training was divided into three twenty-

minute sections and was attended by both parents and their children. In the first section, parents were told how books would be distributed on a daily basis. In the second section, a video was shown explaining the importance of reading aloud to children. In the third section, parents practiced reading to their children and watched a demonstration of how to use wordless picture books. After the training parents were given their first book to read at home with their children.

Outcome measure one was attained in that 47 of the 58 low-income parents increased their awareness of the importance of frequently reading to their children. Outcome two was not achieved, as only 23 out of 90 parents actually attended the library field trip. Outcome measure three was monitored through a survey that asked parents how often they read to their children during the eight weeks and a teacher's record of the books each child checked out, and the date the book was checked out. The parent survey indicated that 66 of 90 parents read to their children daily. However, teacher's records indicated that 45 of 90 children took a book home daily. The author later investigated this discrepancy and found that children were re-reading favorite books and thus not checking out new books, and children were reading books they already had at home for the days they forgot to check-out a book.

For outcome measure four, 63 out of 90 parents modeled literacy behaviors in the presence of their child. Thirty-two of these 63 modeled behaviors daily, three parents modeled behaviors less than twice a week. A 31% increase of modeling was noted after the parent-training occurred. Outcome measure 5 was achieved, as 59 out of 90 parents received library cards.

Although parents appeared to increase their awareness of the importance of reading to their children, and according to self-report did increase the amount of aloud reading, a number of problems exist in the study. The main limitation is that terms in the desired outcomes are not adequately defined. For instance, in outcome number one, the aim was for parents to increase their awareness of the importance of reading to their children. It is unclear how levels of awareness were defined for each parent, or how awareness levels were compared across subjects. Individual differences in awareness of importance of reading could affect the nature of the reading activity and the overall educational benefit to the child. The reliability and validity of the surveys used to assess the outcome measures is uncertain, and poses a second limitation. Finally, a follow-up phase would help determine the long-term effects of the study. Although parents increased their awareness of the importance of reading to their children and increased the frequency of reading activities, it is unclear if these gains continued once the intervention period ended. This type of information is important in designing trainings that produce effective and stable gains.

Wedel and Fowler (1984) examined the effectiveness of a home-tutoring program intended to teach pre-reading skills to language-delayed children. The dependent variable in this study was the child's performance on weekly probes for letter and sight-word recognition. A number of additional measures were also assessed, including receptive vocabulary. The number of letter or word identification trials presented by the parents and the duration of each session were also examined using tape recordings of story-sessions. Each utterance was considered one trial and trial counts were based on child's

performance and not on parent questions. Duration of reading-session was timed from first parent or child utterance to last parent or child utterance. Inter-observer agreement averaged 99%.

Four children aged 6.8, 6, 4.1 and 5.4 years and their mothers participated in the study. All of the children had mild to moderate language delays. Parents were instructed to read a story to their children four nights a week and to tape-record each reading session. Effects of the training procedures were assessed using a multiple-baseline design. During the baseline phase parents were instructed to read stories given by their children's teachers and to ask general questions about the stories. During the week, teachers tested the children on a series of letters or sight words. After the baseline phase, the teacher assigned two of the children three sight words, one child four letters, and the fourth child two letters. Parents were instructed to read to their children and stop at the end of each page, probing their children to identify the given word or letter. If the child answered correctly, the parent was instructed to repeat the answer, (e.g. "Yes, that's a C). If the child answered incorrectly, the parent was instructed to model the correct response. The teacher tested each child once a week; training items were presented twice, once from a storybook page and once from flash cards. New items were assigned to children who correctly responded to the teacher's probes. No teacher-feedback was provided during the testing sessions.

After 12-14 weeks of training, all of the children were given the Peabody Picture Vocabulary Test. For sight word training, one child acquired 26 new words within 14 weeks with 100% maintenance 4-9 weeks after the end of training. The second child

receiving sight word training acquired 18 words within 14 weeks and 100% maintenance 6 to 11 weeks after the end of training. For letter identification training, one child acquired 12 letters in 11 weeks with 2-4 weeks of training necessary before criterion was reached. The second child received five weeks of training before reaching criterion for her first two letters. Parents spent an average of 8-9 minutes per day reading and discussing the story; one parent spent 20 minutes a day, however. Two of the children made substantial gains in vocabulary development; one child's score increased by 16 months after the three to four months of training. One child's scores increased by 10 months, and one child's score increased by three months. One child's scores did not increase, and in fact, his score decreased by three months.

Although the home-tutoring training program did yield gains in vocabulary development and letter and sight-word recognition, the sample size of four mother-child dyads poses a serious limitation to this study. Likewise, although all of the children were referred because of language delay, differences in both chronological age and below-age language development varied greatly. For instance, the children had an age range of 4.1 to 6.8 and scores on the Peabody Picture Vocabulary Test ranged from 3 months below age to two years below age. This type of variance in age and scores makes it difficult to determine the effectiveness of the program, especially since each child had to be tested with separate word lists based on her/his current level and parental-assignment. Statistical regression is another threat to the internal validity of this study. Statistical regression occurs when extreme scores move closer to the mean over time and independent of the intervention. Since the children's pre-test scores were on the extreme low-end of the

scale, it is possible that a natural gain in scores would have occurred without an intervention.

A second limitation concerns the varying and short baseline periods. Baseline lasted from one to three weeks, although it is unclear how many weeks each child was involved in during the baseline phase of the study, or why some children were involved for longer times than others. Time differences were also noted during the intervention phase, where certain children spent more time reading with their parents. For instance, one child spent an average of 20 minutes per session as compared to an average time of eight and nine minutes for the other three children.

Finally, since the children in the study were all involved in a pre-school or kindergarten experience, it is unclear if language gains were a result of home-training or exposure to print at school. The strengths of this study included gains during the follow-up phase and a minimal time commitment per day for the parents involved.

#### Parent-Trainings to Listen to Children's Aloud Reading

Hewison and Tizard (1980) studied home background factors and reading ability in working-class children aged 7-8 and found that the mother regularly listening to and coaching her child to read was the factor most strongly related to reading achievement. The authors completed a pilot study where 65 mothers were interviewed to obtain home background information. Specifically, the mothers answered questions regarding attitudes towards children's play and discipline, sharing of activities and conversation, reading to the child and hearing her read, leisure activities of the child, and attitudes about school.

The Southgate Reading Test I was administered to 63 of the children when they were 6.11 to 7.09 years to assess reading attainment. Results from this pilot study indicated that child's behavior and home-environment were correlated to level of reading attainment. The strongest correlation was between reading attainment and whether or not the mother regularly heard her child read.

For the main study, 107 mothers were interviewed whose children attended one of four schools. Interviews obtained information about attitudes to school and parental help with reading at home. Mother's language was assessed using two scales, and a reading test (the NFER Test A) and the WISC-R were administered to the children. Due to absences, the final sample size was 100 and children's age ranged from 7.02 to 8.02.

As with the pilot study, the greatest correlation was found between reading attainment and whether or not the mother heard her child read. No differences were found between gender or reading performance amongst students in the four schools. Of the 47 children whose mothers heard them read, (termed "coached" in this study,) mean reading scores were 101.7. Scores for the 53 children whose mothers did not hear them read were 87.6. Thus 36% of the variance could be accounted for by the coaching factor. Mothers' scores on both of the language scales revealed a correlation with their children's reading ability. However, this probably occurred because mothers with strong language skills were more likely to coach their children. Children's IQ scores correlated with their reading scores and children who had higher IQ scores received more coaching from their mothers.

A similar study by Tizard et al. (1982) examined the effects of parental involvement in the teaching of reading to six through eight-year-old children living in the working-

class area of Haringey in London. The main purpose of the study was to determine if there was a causal relationship between parental help and reading performance. To control for the fact that children might perform better simply because they received extra help, one group of children was given extra help by a tutor at school. For the first year of the three year study, (1975-1978), 1,867 children participated, with 400-500 students leaving the study at the end of each year to attend the next level of schooling (Junior classes) and that same number entering the study as first year students (Infant classes). Six schools participated in the study, all of which enrolled students of similar SES and ethnic backgrounds.

The schools were randomly assigned to three groups, parent involvement, extra teacher help and control. Schools 1 and 2 were assigned to the parent involvement group, schools 3 and 4 were assigned to the extra help group and schools 5 and 6 received no intervention other than annual testing of reading attainment. For schools 1 and 2 and 3 and 4, one class was assigned as the research class and the remaining class was assigned as the within-school control group. At schools 3 and 4, a teacher was hired both to hear the children read and become involved in reading instruction. This was different than the parent-involvement group who only heard the children read and did not provide instruction. Another difference between these two groups was that the parent-involvement group interacted with the children on a one-to-one basis, whereas the teachers heard children read both individually and in small groups.

Parents were observed hearing their children read to them two to three times per school term. During the first and second visit for parents in the involvement group,

parents watched the researcher listen to the child read to observe specific techniques.

During the final two terms of the project, children were observed in other literacy related activities with their parents. Except for advice on how to hear their children read, parents were not given a specific training. In certain incidences, parents were given extra advice on how to hear their children read if it was decided that their techniques were counter-productive to the study. Parents were told in advance when the visits would occur, and visits generally occurred at nighttime.

Children in school 1 took books home three or four times a week, and two or three nights a week at school 2. At school 1, students in the infant year took home their class reader and in the junior year, they took home the class reader and an additional book. During the final two terms of the project, children took home other literacy related work and parents were given advice on how to work with these materials. At school 2, children in both the infant and junior classes took home books they were currently reading at school. Initially, children were told not to read ahead of material already covered in class and teachers heard the children re-read what they had read at home. By the second term, the children had read much more at home than had been anticipated, causing limits to be placed on the amount of reading to be done at home, and providing the children with additional books to take home.

Children were tested at the end of the 1975/76 school year before the intervention period began, again at the conclusion of the 1977 year, at the conclusion of the infant year, the end of the 1978 year, at the conclusion of the junior year, and again in 1979, one year after the conclusion of the research study. Test selection was difficult because of the

large differences in reading attainment between the 6-year-olds in the infant year and the nine-year-olds in the junior year. However, the tests chosen had a parallel form reliability of .95 or above, and a test-retest reliability of .96 for the Spooncer Test and .92 for the NFER BD.

Results of the study are broken down into the following areas:

- 1) Comparison of mean scores for experimental and control group at the beginning, middle and end of the intervention period: Due to the fact that large between-school differences were found in reading attainment before the intervention phase, statistical comparisons were based on experimental and control groups within the same school. In the four schools where an intervention took place, no significant within-school differences were found. There were also no significant differences found between experimental and control group within schools at the beginning or end of the intervention, or on such factors as father's occupation, language spoken at home, nursery school experience, length of residence in England, or school attendance. After the two-year intervention, significant differences were found in reading scores between the experimental and control groups for the parent-intervention groups, but less notable differences were found between the experimental and control groups for the extra teacher help groups. Children in the experimental group in school 4 had higher scores than the control group, although the scores were not statistically significant, and students in the experimental group in school 3 had lower scores than the control group, although once again the differences were not statistically significant.

- 2) Relationship between performance levels at the beginning and end of the intervention period: Scores on the Southgate were grouped based on a score of 12 or below, 13-19 or 22-30. For the dependent variable of NFER A scores, a three-way analysis of variance (School X Experimental Group X Initial Reading Band) for school 1 and 2 produced three highly significant effects indicating that in each experimental group within schools early reading performance was a predictor of later achievement.
- 3) Group reading performance at the end of the first junior school year expressed in terms of the proportion of children falling into different score bands. Reading scores were based on a score of 99 indicating below age level on the NFER Test A. In 1976, 56-80% of the first year junior children scored at this level and 65% of the students in the sixth school scored in this range. In 1977, 61% of the first year juniors scored at this level, although the range between schools varied, with 48% of the students in school 5 performing at this level versus 72% of the students at school 1. In 1978, the number of children who received below age scores decreased for the children in both parent involvement groups. Some improvement was seen in school 5, but not in school 6, or the extra teacher help groups. Additionally, significant differences were found between the experimental and control groups for the parent-involvement schools, but not for the extra teacher help schools; parent involvement reduced the number of failed readers and increased the number of proficient readers.
- 4) Reading standards in the second-year juniors: mean scores 12 months after conclusion of the intervention: In 1979, one year after the conclusion of the research project, children in the parent-involvement group continued to perform at a higher reading

rate than children in the control group. In school 1, the difference was highly significant (mean of 101.7 versus 90.5) but not in school 2 (mean of 96.2 vs. 92.6). For children in the extra-teacher help group, children in the experimental group did not perform at a higher reading rate than children in the control group.

- 5) Reading standards in the second-year juniors: proportions of scores below standardized average for age: After comparing scores from 1976, 1977 and 1978 with scores from previous years, it was determined that between 75 and 85% of the children were reading below age level, as compared with 50% of the national standardized sample. In 1979, 82.1% of the second-year juniors in the control group at schools 1 and 2 were reading below age level whereas students in the experimental group were reading at a national level, or 50%. This improvement in students' scores was higher than that usually seen in the most successful school in the sample, school 5, whose students consistently had a smaller percentage of below-age readers.

This study proved that even when parents are only given advice, as opposed to specific training, they can help their children increase reading attainment. Despite the positive findings, certain limitations affect the confidence of the results. Specifically, the children in the experimental groups were all members of one class and were all taught by one teacher. Since there was no within-class comparisons, it is possible that a specific teacher's instructional methods in one class contributed to reading gains rather than the parent-involvement strategies. Likewise, parents of the children in the control group were not restricted from hearing their children read. Since results from parent surveys in other studies (e.g. Hewison & Tizard, 1980) indicate that many parents are involved in their

children's schooling, including reading to or hearing their children read, it is possible that parents in the control group regularly participated in parent-involvement activities.

Hannon (1987) replicated the Haringey study (Tizard et. al. 1982), by examining the effects of parental involvement on children's reading scores from one working-class school. The school was in a working-class neighborhood in the north of England and had a history of parental involvement through encouraging parents to hear their children read and allowing children to take home books. From 1978 to 1983 the school was involved in a Reading Project similar to the methods described in the Haringey project in which children were encouraged to take books home on a daily basis, and parents were encouraged to hear their children read. Parents and teachers exchanged information via a reading log, and parent-support was given via parent meetings, informal parent-teacher contracts, home visits and information sheets.

Unlike the Haringey project, children entered this project at age 5, and the intervention period was for three years instead of two. A total of eight teachers participated and followed three cohorts; the first entrance group consisted of 40 children, followed a year later by the second group of 35 children and the third year with a final entrance group of 34. The research aimed to compare children in the Reading Project with children who had attended the school before the Reading Project began. The hypothesis, based on the findings of the Tizard et. al. study was that children in the Reading Project group would have higher reading test scores than children in the pre-project group. Children were placed into project and non-project conditions based on their year of birth and when they entered school. The project was monitored by examining the reading cards

used to record the frequency of home reading. Parents were supposed to hear their children read a minimum of five times per week, and the exact frequency for each child was calculated. Children were tested for their reading attainment at the end of each year.

Pre-project reading scores were collected for five of the pre-project cohorts at the end of the intervention period with a mean score of 93.1 on Young's Group Reading Test. These results were typical of children from this working-class area. To assess pre-project parental involvement in the teaching of reading, parents were interviewed to determine if they heard their children read almost daily, several times a week, about once a week, less than once a week or never. The interviews revealed that over half of the children were heard reading at least several times a week. Additionally, test scores for 72 of the children revealed that those children who were heard reading had higher test scores.

In order to assess whether the project's goal, "to increase the frequency of children being heard to read at home to the 'almost daily' level for as many children as possible," (p.61) was achieved, parents were again interviewed at the end of the second year. The results showed a significant increase in the frequency with which parents heard their children read. Ninety per cent of the children read to a parent "almost daily" as compared to less than 50% for pre-project children.

Project data were collected for 76 of the children. Comparisons between project children and pre-project children show that the proportion of boys was higher in the project group than in the pre-project group, but not at a level of significance. That 91 percent of the project children had attended the school the year before the intervention period as opposed to 94% in previous years, and that six of the project children spoke

English as a second language as opposed to one in the pre-project group. Unlike Tizard et. al.'s findings, this study revealed a statistically insignificant difference of less than two points in test scores after the three year intervention period between pre-project and project children. Distributing the score into bands also showed insignificant differences with slightly fewer project children than pre-project children placed in the lowest band.

Due to the fact that teachers generally acknowledged that there tended to be "good" years and "poorer" years, analysis was conducted on the three project cohorts and the five pre-project cohorts. For instance, for project cohorts, one group's scores was similar to scores of the poorest pre-project cohort, one was similar to the best group and the third was superior to any pre-project cohort at the school. The variability in scores between cohorts possibility influenced the effect of parental involvement since a comparison of one pre-project and project cohort could be quite different than a comparison of other matched cohorts. The author attempted to work around this dilemma by comparing data for each of the pre-project cohorts with each of the project cohorts for 15 possible pairs. In one pair, the scores were similar, in eight pairs, the project cohorts' scores were higher than the pre-project scores and in the remaining six pairs the opposite was true.

Finally, factors such as age, sex, and prior reading level were analyzed both singly and as a group. As has already been mentioned, there were no statistically significant differences singly. Using a regression analysis on the group of pre-project children who had pre-test measures at the end of the intervention period, the authors found that 43.5% of the variance on test scores could be attributed to the age, sex and prior reading level factors.

The remarkably different results in this replication of the Haringey Project led to a thorough analysis of both studies by the author. Hannon acknowledged that both studies had adequate internal validity, and cited possible explanations for the different results, including differences in home visiting, control conditions and reading tests. In the Haringey project, two full-time researchers conducted home-visits two to three times a term. The researchers observed the parents read to their children and gave parents specific advice. In the present study, a teacher from the school conducted home-visits. The teacher had more families to visit, and thus visits were shorter and occurred less frequently than in the Haringey project. The main difference, however, was that in the Haringey project, home visits were considered educational for the parents, whereas in the present study, the visits were more linked to school-home collaboration. The children from the Haringey project came from schools that did not have a history of parent involvement, whereas the school in the present study encouraged parent-involvement, and many parents already worked with their children on school-related activities. In the Haringey project then, the chance of improvement by introducing parent-involvement was greater than the present study where parents were already involved in the educational endeavors of the control group.

#### Specific Reading Strategy Trainings for Parents

Wilks and Clarke (1988) examined the effectiveness of training mothers as home reading tutors. Their overall aims were to evaluate the effects of parental involvement on reading achievement and to evaluate the effectiveness of the short home-tutoring training

program. Specifically, they hypothesized that the training program would elicit changes in the mother's behavior in reading techniques including an increase in the frequency of occasions in which there was a delay before intervention, an increased use of meaning context, phonic cues rather than word prompts, and an increased use of praise. It was also hypothesized that these behavioral changes would elicit changes in the reading scores of the children, with children in the trained group showing greater gains than those children in the encouraged or the control group. Mothers of children in the trained group participated in a training program to modify their behavior around reading. Mothers of children in the second experiment group, the encouraged group were encouraged to hear their children read at home but were not trained in specific tutoring techniques.

Forty-two children, 26 boys and 16 girls who were average or below average readers participated in the study. Each child, aged 8-9 years, was randomly assigned to one of the three groups, trained parent group, encouraged group and the control group. A pre-test-posttest control group design was used to compare the reading gains for each group. During the pretest phase, mothers participated in an interview which examined parental involvement in children's reading at home (e.g. the number of times they listened to their child read aloud per week and the average lengths of time they spent listening to their children) and other background variables. The children were administered Form A of the Neale analysis of Reading Ability Test. The children were administered Form C of the Neale test 20 weeks after completing the 4 week training program. Mothers in the trained group met for an hour a week for four weeks. During the first session, mothers were taught reading-skills such as phonic cues, ways to introduce a book, ways to encourage

good reading habits and how to select an appropriate time and place for book reading. During the second session, mothers were taught how to choose an appropriate book for reading. During the third session, mothers were taught appropriate responses for their children's correct and incorrect reading. During the fourth session, mothers practiced tutoring techniques and received feedback from trainers. Mothers in the encouraged group met for one hour for the first two weeks. These sessions were identical to the first two training sessions for mothers in the trained group.

To assess the role of parental involvement on children's reading achievement, the initial reading accuracy and reading comprehension scores were correlated with the measure of parental involvement in their children's reading. Both correlations were positive and significant thus concluding that parental involvement is positively related to children's reading achievement in this study.

To assess the effects of training on mothers' behaviors, an audiotape of mothers' tutoring styles was made at the beginning of the study. The tape showed that mothers only occasionally provided meaning, context or phonetic prompts and a low frequency of nonword prompts or praise. The effectiveness of the program on mothers' behaviors was assessed through pre and post training comparisons of maternal responses for the trained group. Except for prompts with phonics, significant changes were found in all of the behavioral measures. The training was deemed successful in terms of mothers' behavior changes in the following tutoring procedures: response with meaning and context prompts rather than word prompts, praise for self-correction, corrections after a prompt, and for other constructive responses.

To assess the effect of training on children's reading, final test scores were examined. Positive changes in both accuracy and comprehension were found with the trained group experiencing greater changes than the encouraged group and the encouraged group experiencing greater changes than the control group. Using covariance analyses, the significance of the changes was assessed; changes were not statistically significant for accuracy scores, but were significant for comprehension scores.

Although the results indicate that parents can be trained to tutor their children with success, the results are not generalizable. For instance, the children in the sample were 8-9 years old and were average to slightly below average readers. Thus, it is possible that their reading scores would have increased as a result of teacher instruction. It is also questionable whether or not mothers of children with more serious reading problems would be able to successfully tutor their children using this intervention since the training focused on mother's responses to their children's reading behavior and not instructional strategies per se. Likewise, it is questionable whether beginning readers would show improvement in pre-reading or reading skills based on this type of intervention. Further research might replicate this type of training for parents of younger children, or children with reading difficulties to confirm the effectiveness of this particular parent-involvement for a more diverse group of children.

A second problem with the study involves the short length of the intervention phase. Mothers were trained, and carried out the intervention for only four weeks. Additionally, although a review of each training was given to the mothers as a reference, each week's training introduced many different skills that might have called for more participant

practice and trainer feed-back to ensure accurate implementation. Since the main objective of the study was to assess mother's behavior around reading, the material presented in the fourth training session might have been under-emphasized.

Leach and Siddall (1990) examined a parent training that involved Hearing Reading (HR), Paired Reading (PR), Pause, Prompt, Praise (PPP), and Direct Instruction (DI). Paired Reading is a method in which parents and children simultaneously read text; Pause, Prompt, Praise is a parent-delivered tutoring package where parents "teach self-correction responses to errors in reading using syntactic and semantic cues" (p. 349). Direct Instruction reading is a phonic-based instruction program where the parent follows a specific and detailed script. Direct Instruction, developed by Englemann has proven to be an effective training tool for parents (Leach & Siddall, 1990). The authors hypothesized that the Direct Instruction method would increase beginning reading skills more than the PR or PPP methods. It was also hypothesized that the Direct Instruction methods and the PPP methods would be more effective than the Hearing Reading strategy because of their explicit instructional characteristics.

Twenty-six boys and 14 girls with ages ranging from 5 years 3 months to 6 years 4 months participated in the study. All of the children were beginning readers and made more than 16 errors on the first story on the Neale Analysis of Reading Ability. Reading sessions occurred in the homes and lasted 10 to 15 minutes a weekday for 10 weeks after the last training session. The HR group training consisted of suggestions for reading at home, including choosing an appropriate time and place for hearing children read, talking about the story to be read, providing praise and avoiding criticism, and giving the child an

opportunity to self-correct. The teachers gave appropriate level books to the parents every day.

Parents in the PR group attended a one and a half hour training session which included an introduction to Paired Reading and a demonstration of simultaneous and individual reading, a demonstration of how to do PR and supervised role-playing. Parents received a written summary of the training and teachers provided the appropriate level books for the children. The PPP training lasted for one and a half-hours and included the following: an introduction and demonstration of PPP and supervised role-playing by parents. Parents were again given a summary of the training and teachers provided the books. Parents in the DI group received three training sessions of one and a half-hours each. Parents in this group received the following information: Examples from Teach Your Child to Read in 100 Easy Lessons (TYCTOR), a book based on the DISTAR program, introduction and basic characteristics of DI, demonstrations of some lessons with an emphasis on correct letter pronunciation and blending, and error correction procedures and supervised role-playing of lessons by parents. Reading material for this group was taken directly from TYCTOR. Additionally, parents in this group used social reinforcement for effort and correct reading every day during the intervention phase.

Results from the pre-and post tests of the Neale Analysis of Reading Ability suggest that the children whose parents received the DI and the PR trainings attained two to three times greater gains in reading than the HR group. The PPP group had somewhat greater gains than the HR group, but the results were not statistically significant.

The authors in a number of incidences carefully controlled for potential weaknesses in this study. For instance, since it was acknowledged that parental involvement might be successful because of the additional time spent with children and the potential increase of motivation, children received the same amount of parental involvement and interest and came from the same school classes, thus increasing the likelihood that differences would be attributed to the training methods. Additionally to assess that all of the children were in the same stage of beginning reading, tests were administered to measure pre-reading skills such as phonetic knowledge, verbal reasoning, word fluency, visual and auditory discrimination and word meaning, as well as reading accuracy and comprehension. The results showed insignificant differences in phonic knowledge and reading readiness, thus indicating that positive gains could be attributed to training methods. The importance of phonological training is evident from this study, yet it is unclear how much phonological training the children were receiving from classroom instruction, or if this type of parent-led instruction would be helpful to students prior to school entrance. A study involving direct instruction for younger children would help generalize the results, and provide information that might confirm the importance of phonological training by parents. A study of this nature would differ in the type of training, since it would be assumed that instead of listening to their children read, parents would apply instruction via interactive reading with their children.

Rubert (1994) analyzed the effectiveness of a scaffolded parent involvement program of direct literacy support. Scaffolding is a concept whereby parents work with children at an appropriate skill-level, constantly restructuring their activities to produce challenges

while keeping frustration levels to a minimum. Scaffolding in this instance is based on Gaffney and Andreson's two-tiered scaffolding system where in the first tier the parent offers the child support and in the second tier the parent is educated in ways to work with her/his child that elicit maximum success. This study trained parents using a scaffolding system similar to the one that parents might provide to their children. The main research questions were: "To what extent did the nature of the parent tutoring change over time? How well were the parents able to learn the new strategies? Did they use the strategies in a responsive manner? What factors facilitated or interfered with change? The project goal was to "observe the extent to which parents utilize newly learned strategies with their children, and to record changes in the parents' beliefs about the efficacy of the intervention" (p. 232).

The sample consisted of three first grade children and their parent(s) from three different classrooms in a school in a middle-class suburb of Chicago. The children were identified by their teachers as qualifying for a Project Prevent program. Parents participated in three workshops intended to complement the Project Prevent Program, and which emphasized support reading and active listening. Support reading strategies included echo reading, where the parent reads a sentence and the child repeats it, partner reading where parent and child take turns reading sentences, and independent reading where the child reads without assistance from the parent. The intervention occurred over a three-month period.

Data were collected through book-sharing tapes, interviews, questionnaires and surveys which were collected once a month for three months. Mothers were asked to tape

their children reading after each workshop to determine in what ways parents utilized workshop information at home and the dialogue between parent and child. Parents read one book of their choosing and one book provided by the tutor and chosen because of its challenge to read, thus promoting responses from the mothers.

Transcriptions of the tapes were coded to determine parents' responses in the areas of text support, strategies to promote comprehension and affective responses. During the interview, which occurred after the tape, a survey and questionnaire were completed, and parents were asked to read the transcript of the tape and "think aloud" by commenting on their reasons for choosing to respond to a child in a particular way. The Survey of Home Literacy elicited information regarding the child's reading habits and the availability of printed material in the home. The Parent Survey elicited information regarding parents' feelings towards their children's progress and their ability to help their children in reading.

To analyze the data, a case study was developed for each family. Text support included phonic support, word support and support reading (e.g., echo reading, partner-reading and independent reading). Two of the mothers changed their type of reading, one from phonic support and word support to a more contextually based support and the other from word support to support reading. The third mother had a difficult time introducing support reading because of her daughter's refusal to work with her.

The workshops offered a variety of strategies aimed at promoting comprehension. Changes in strategies were seen between the first and third tape. For instance, one mother previewed the book only for the first two tapes, and on the third tape used picture cues,

asked prediction questions, and discussed pictures and vocabulary. Another mother added seven additional strategies by the third tape. Both of these mothers switched their focus from word or letter pronunciation to comprehension strategies. This was particularly observed when the children exhibited reading improvement and the mothers modeled longer words. This change precipitated the author's hypothesis that as mothers shift from phonic-based instruction to modeling longer units of text, comprehension strategies become more frequent and different types of text support elicit varying degrees of comprehension strategies. This was noted in the third mother's tapes where during easier readings the mother emphasized comprehension, but as the readings become more difficult, she increased the use of phonic and word support.

Scaffolding instruction for parents appeared to be valuable as seen by their use of the support reading strategies. Parents needed scaffolding to help them with new strategies, and their acceptance and ultimate implementation of a strategy depended on their preconceptions of beginning reading, the child's response to the parent, acceptance and understanding of the child's problem, and a good relationship between the family and school. Parental responsiveness was seen as critical in the use of strategies, and parents were able to better understand this concept by participating in a scaffolding training themselves.

Heath (1985) conducted a study that compared the effectiveness of two reading techniques and parent-involvement. In a pilot study, 12 children were assigned to a paired reading technique group, a reinforcement group where praise was given for words read correctly, and a control group. The children, aged 7-9 years were chosen because they

were one or more years behind their actual age in reading. Parents were invited to the school to listen to their children read as a way to establish baseline behavior. During this observation, it was noted that mothers provided very little praise to their children during reading.

The training for the paired reading group took place over two one-half hour sessions and covered the technique of paired reading. Additionally, parents and children returned to monitoring sessions, which lasted for 15 minutes and discussed specific problems such as choice of books and parental concerns. Parents in the reinforcement group were trained in praise techniques such as saying "good" for a word read correctly, supplying the correct word when a child misread, and giving a candy to the child for every three words read correctly. The results of this pilot study concluded that children in the paired reading group made greater gains in accuracy and comprehension than children in the reinforcement group.

A main study was conducted with 19 children in the paired reading group and 16 in the control group. The average age of the children in this study was 7 years and 11 months. Unlike the pilot study, not all children in this main study were administered an intelligence test and a teacher from the school was involved in the paired reading training session. Additionally, the sample was biased against the paired reading group. Using the Neale Analysis A and B, reading gains over three months for accuracy were 6.8 and 10.7 for comprehension, versus 3.3 for accuracy for the control group and 6.4 for comprehension.

Jungnitz (1985) examined the effects of a parent-training for paired reading with Asian children to determine the effect of this type of program on ethnic minorities. Twenty-seven students participated in this study. Ten children and their parents participated in the Home-School Reading group. Children in this group read aloud to an adult in the home, and then re-read the same material to the teacher. Unlike other studies examining the Home-School Reading group, (e.g., Hannon, 1987) the listeners were mostly older siblings because the parents were not proficient in written or spoken English. Eleven children, ten of whom were Asian, participated in the Paired Reading Group. One mother who was not proficient in English sat with her child while the child simultaneously read with a book on-tape. Training sessions for paired reading occurred at each home.

The second part of Paired Reading, independent reading was introduced to parents at a training held at the school, but was followed by independent sessions at each home due to the fact that the school training was deemed unsuccessful. Independent reading was more difficult for the parents, and successful implementation of this procedure did not occur for the whole group until the final stages of the project. The final group consisted of seven children whose parents were not part of the study and who received no training. Children were not randomly assigned to groups, and children in the third group were those whose parents did not reply to the call for volunteers. Thus, this group is considered a comparison as opposed to a control group.

All of the children were pre-tested on the Schonell Word Accuracy Test, the Neale Reading Accuracy Test and the Neale Reading Comprehension Test. Posttests were given

14-15 weeks later. A one-way analysis of variance was used with the pre and posttest data separately for the three groups, and a paired t-test was used to compare pre and posttest means for the three groups separately. Significant gains were seen between pre and post Schonell Word Recognition test scores, with the largest gains seen in the paired reading group. Mean gains in progress on the Neale Reading Accuracy Test were 13.1 months for the Paired Reading Group, 7.1 months for the Reading at home group and 3.9 months for the comparison group. Results of the Neale Reading Comprehension Test also showed greater gains for the paired reading group. This test yielded the greatest gains, which is consistent with research that has shown that the greatest gains for paired reading are in comprehension. The mean score gain from 81.0 to 82.0 from pre-test to posttest for the comparison group is perhaps attributed to the fact that this group had a smaller sample size and a possible distortion of results based on the regression of one student in this group.

As with other studies examining the effectiveness of paired reading with parents, this study indicates that reading gains occur when the sample is composed of ethnic minorities, in this case Asian children. Certain factors however weaken the results. For instance, in other studies, parents participated in the paired reading with their children, whereas in this study many of the paired readers were older siblings. This might change the interaction because the dynamic between siblings is different than that of parent and child. The siblings might be less motivated than parents to perform the tasks, or the older siblings might utilize additional strategies learned in school. As with other studies, practice effects might have occurred with the Schonell, which is a frequently

administered test, and the participants might have responded in ways they thought were socially acceptable since they knew they were part of a study. Additionally, although the students in this study had reading ages below their chronological ages, they all had experience with reading instruction, and thus effects cannot be generalized to beginning readers.

Fry (1985) examined the effectiveness of a parent home tutoring training that incorporated a token economy reinforcement system. This study was modeled on a previous study, in which children with reading difficulties were given stickers by the headmaster for words read correctly. In this program, an average gain of seven months was noted and an average gain of five months for comprehension. For this study, parents used a token reinforcement system in the teaching of word-recognition skills.

The study employed a reversal design with a baseline phase of two months, followed by an experimental phase of two months and a two-month return to baseline phase. Assessments occurred at the end of each phase. Thirty children aged 7-10 years participated with their parents. All of the children were behind in reading from 1 year 10 months to 4 years 1 month. The selection criteria were a reading age of less than seven years and 18 months or more behind in reading. Parents were trained during three nights at school and received two individual trainings at their homes. Children were tested two months after the beginning of the school year and selected for the study based on the test results. Teachers were asked to select the children, but after the selection were not involved in the project. Two months later the selected children were given the Dolch List

of words, which contains 400 words. Incorrectly read words were used for the stimulus cards which contained one word on the front and a sentence with that word on the back.

Parents were asked to attend three trainings to help them assist their children with their reading difficulties. During the first training, parents were encouraged to make reading sessions relaxed and to praise their children for effort. A handout with program specifics was discussed with the parents. The program incorporated the following tasks:

- 1) Parents were to make cards with the unknown words, and the child was to help compose the sentence for the back of the card.
- 2) Parents were to choose a time to work with their child, for no longer than 15 minutes a night.
- 3) Parents and children were to make a reward menu that included items with a range of points, thus ensuring that the child could receive a reward a night, or could save points to exchange for a more valuable reward at a later time.
- 4) Parents were to begin each session with two known words and give the child one point for correct readings. If the child incorrectly read the word, parents were to model the word and then ask the child to read the word again. Parents were to praise the child for a correct second reading, but not give a point. Parents were to introduce a new word. Words were repeated until they were read correctly for three consecutive times.
- 5) After 15 minutes, the child was asked to read the sentences on the back of the cards, and was awarded one point for each sentence read correctly.
- 6) If the child did not attempt to read the word, strategies were provided, such as starting with the first letter; attempts were awarded.

The second and third trainings reviewed the above points. Two home visits were made to each family to ensure correct implementation of the procedures.

After two months the children were given posttests. A 1.9 month gain was found during the first baseline with a range of minus 4 months to 16 months, a 8.33 month gain was found during the experimental phase with a range of plus 2 months to 16 months, and a 1.97 month gain was established during the second baseline with a range of minus 4 months to plus 7 months. Seven children increased their scores by a year or more and twenty-six out of the thirty children showed the treatment effect.

Although the study indicates that word-recognition gains can be achieved through this type of parent-training and token reinforcement system, the gains did not continue during the second baseline. Thus, while gains were made during the parent-involvement period, these gains were not sustained, possibly because parents stopped the procedure once the treatment phase was completed. In order for this type of program to truly be successful, gains would need to be maintained throughout the second baseline period and during a follow-up phase. Additionally, by age 7 and one-half years, children are usually able to read all of the words on the Dolch List, even if they are still behind in reading achievement. Thus, gains in word-recognition skills might be short-term gains but need to be complemented with other reading skills for overall improvement.

One important strength in this study that is lacking in many of the other parent-training studies is the review of teaching strategies for parents, and follow-up sessions to ensure correct parent implementation. Taping the sessions however, would provide for more accurate feed-back, and would decrease the chance of improper parental involvement. A weakness in the study is that it does not conclude if positive results are more an effect of the reading strategies (e.g., the introduction and practice of new words),

or the token reinforcement system. Although many studies have focused on token reinforcement for behavioral problems, few studies have incorporated a token reinforcement for reading improvement, although it has been generally acknowledged that the additional time spent between parents and children around reading leads to an increase in motivation to perform.

A pre-test/post-test experimental design was used by Ellis (1992) to examine the effects of a 12-week parent training and intervention program for reading ability and self-perceptions of reading ability in second and third grade students. Fifty-eight students six or more months below grade level in reading, and their parents participated in the study. Twenty students were randomly assigned to the experimental group and thirty-eight were assigned to the control group. During the four-week pretest phase, each student was assessed using the Basic Reading Inventory and the Self-Concept Sub-scale of The Motivation to Read Scale. Several students were interviewed concerning reading ability and habits, and parents were interviewed to determine perceptions of child's strengths and weaknesses in reading, at-home reading habits and expectations about the reading program.

During the intervention phase, four parent-child reading programs were established, one at each of the schools the children attended. Each group met for one hour each week for twelve weeks. Children attended some of the sessions. Techniques such as relaxed reading, paired reading, comprehension questions and praise and encouragement were discussed in the sessions. Requests for additional information from the parents were also provided, including reading instruction skills, word recognition skills and phonetic skills.

During the post-test phase the children were re-tested and parents were re-interviewed. Qualitative and quantitative analyses were used to examine the results of the program. Quantitative analysis included separate analyses of covariance for each of the four dependent variables, three of which measured reading ability, the number of errors on graded oral reading lists, the number of errors on graded oral reading passages, and the number of errors on the graded oral comprehension questions. The fourth dependent variable was the self-concept of reading ability as shown from the raw score on the self concept Sub-scale on the Motivation to Read Scale. An ANCOVA analysis showed significant results for the number of errors made on graded passages; students in the program made significantly larger gains in reading ability as measured on reading passages than children in the control group. No significant changes were found on the children's self-perception of reading ability.

Qualitative analysis produced information regarding attrition, barriers to involvement, parent to parent interaction, child involvement and individual family prescriptions. Lack of time and perceived lack of program utility contributed to attrition issues. All parents agreed that time constraints posed a problem for involvement in the study. Time, frustration and lack of knowledge contributed to barriers for involvement for parents. Parents reported that after completing the program they felt better prepared to work with their children. Parents felt that support from other parents and exchange of information were important factors for the success of the training program. The parents all agreed that they wanted their children present at all of the weekly trainings. Children seemed to enjoy the one-to-one reading time with parents, and parents agreed that the training provided an

opportunity for quality, distraction-free reading time with their children. Finally, although most of the parents found most of the techniques helpful, some parents required additional instruction based on individual needs.

Although the results of this study indicate that the training the parents received significantly increased the reading ability of the students in the experimental group, certain limitations are evident. The first limitation involves the presentation of results. No test scores for students in either group are cited for either the pre-test or the post-test conditions. It is thus difficult to fully understand the significance of gains in the experimental group. Likewise, while the author acknowledges that both the experimental group and the control group made reading gains, the lack of data for either group leads to inconclusive evidence that the greater gains in the experimental group are either significant, or, are a result of the parent-training program. Mean test scores for the two groups would yield a higher level of confidence in the author's conclusions.

A second limitation to the study is its lack of a follow-up phase. Although gains were noticed immediately after the intervention phase, it is unclear whether these gains would be maintained for any length of time. Follow-up tests 3-6 months after the completion of the study would provide information regarding the long-term effectiveness of the parent-training.

To provide more complete information regarding the effectiveness of the training, and specific strategies that influenced reading gains, future research might analyze the effectiveness of the individual strategies of relaxed reading, paired reading, comprehension questions, and praise and encouragement. Additionally, since trainings

included additional information based on parents' requests, it is possible that differences could be attributed to these specific strategies. For example, parents in two of the groups received information regarding basic instructional styles, whereas parents in the other two groups did not receive this information.

As with other studies, the results cannot be generalized to younger children beginning the reading process. Likewise, as with most of the studies, since parents self-selected for participation, it is unclear whether their motivation to help their children, and the fact that they had the time to participate in both the trainings and the readings with their children influenced the effectiveness of the study. Unfortunately, this is difficult to avoid since studies require volunteer participation, and those who volunteer tend to have an interest in both the process and the outcome of the study.

This study, unlike many others, provided an in-depth qualitative analysis of data. The qualitative analysis yielded important information regarding the effectiveness of the training that could be useful for designing other parent-training programs. For instance, parents felt that it was useful having their children participate in the training with them, and having the opportunity to reflect with other parents.

#### Summary of Literature Review: Specific Limitations

In general, the research supports positive effects in reading when parents are trained to become more involved in their child's reading activities. Despite the apparent effectiveness of many of the training programs, specific limitations cut across many of the studies. One overall limitation is that trainings have not been evaluated systematically,

making the exact nature of their effectiveness difficult to discern or replicate. Without standard values for what determines effectiveness, trainings are deemed effective based on a measured outcome of positive gains in reading. Little emphasis is placed on evaluating the effectiveness of the training based on its content, presentation, or parents' understanding and ability to correctly implement specific strategies. Likewise, although reading gains are one measure of training effectiveness, they do not necessarily shed light on the quality of a specific strategy, or why and how a strategy was useful. In other words, the overall effect might be ascertainable, but the important steps along the way might not be. These problems might be lessened if clear objectives were stated and evaluated from the onset.

A second limitation that cuts across many of the studies is the lack of generalizability in results. Many of the studies focused on children who have already had reading instruction, and who are in need of remediation. Much of this research has supported gains, but has neglected to show maintenance effects. This is troublesome because much of the research has suggested that remediation is rarely successful for reading problems, making it crucial to evaluate long-term effects of any type of remediation program. The question also arises as to how specific trainings for one group of parents (e.g. parents of 9 or 10 year olds) might translate for another group of parents.

A third limitation is the lack of a control group in most of the studies. Many of the studies did use pre-post tests, but only for the children of parents receiving a training. Clearly, results would be more impressive if control groups were incorporated into studies focusing on effective parent-training.

A fourth limitation involves threats to internal validity such as history, maturation and selection bias. When working with young children, threats to internal validity such as history and maturation are high. Many of the outcome measures in these studies included skills such as language development that might have changed as a result of normal developmental changes and not treatment effects. Selection bias could have also posed a problem in that all participants were volunteers who might have had a higher motivation to enhance their children's skills than the general population. Unfortunately, this type of threat to internal validity is hard to control.

A fifth limitation is the use of norm-referenced tests as dependent variables. These tests do not necessarily represent true gains because test questions might not adequately reflect material the child has been exposed to. For minority children this is a particular problem. In a similar vein, practice-effects could have occurred in studies that used one or two tests and tested frequently.

Finally, since the research on reading supports the importance of acquiring specific pre-reading skills it seems essential that trainings for parents focus on training parents how to implement those specific skills with their children. In the research I reviewed, only one study explicitly focused on letter-naming skills, and no study examined a phonological-based training. These two skills are hailed as crucial for pre-readers, along with exposure to print, usually via reading activities with parents. It would make sense then, that future research focus on parent-trainings that incorporate these skills for parents of pre-readers.

## CHAPTER 3

### METHODS

#### Research Questions

The purpose of this chapter is to outline the specific methods used to address the research questions. Specifically, the chapter provides information on subject recruitment and participation, the research design, and the procedures for collecting data. The primary purpose of this research is to examine the effectiveness of training for parents of pre-readers that incorporates the teaching of phonological awareness and letter-identification skills in parent-child interactions around print. A second purpose of this study is to determine whether training sessions for parents produces growth over a short time period in early literacy skills in kindergarten children, and to determine if parents find the training useful and are comfortable in implementing its objectives.

Questions are posed both at group and individual levels, and examine the issues of the effectiveness of a parent training, as well as treatment integrity and parent satisfaction. The overall aim of the study is to examine effects of training parents in specific phonological awareness and letter-identification activities during home-based parent-child interactions on the pre-reading readiness skills of their kindergarten children.

#### Subject Participation and Recruitment

Forty Parent-Child dyads were recruited to participate in this study. Twenty were randomly assigned to the control group and twenty to the treatment group. The children

and their parents were recruited through three kindergarten classrooms in three small towns, and three kindergarten classrooms in one school in a small, urban city in the Northeast, for a total of six classrooms. The three kindergarten classrooms in the small towns were half-day classes. Two of the kindergarten classes in the small urban school were half-day, and the third class was a full-day program.

A flyer (see Appendix C) describing the study was distributed by the classroom teacher to all of the children in each kindergarten classroom. Interested parents were asked to return the bottom half of the flyer with their name, address and telephone number to the school, and initial contact was then made by the researcher via phone. During the phone session, parents were provided with more details regarding the study, and were told that an informed consent form (contained in Appendix D) and a Parent Questionnaire Form (contained in Appendix E) would be sent home via their children. The consent form was approved by the Human Subjects Review Committee at the University of Massachusetts at Amherst, and stated that participation was voluntary, and that the parent and child could terminate at any time during the project. Participating parents and children were informed that they would receive a children's book and a Friendly's Ice Cream gift-certificate for participating in the study. Friendly's Ice Cream donated the certificates for the children.

Parents were instructed to complete both forms if they were still interested in participating, and were reminded that once the forms were completed, they would be randomly assigned to either the control or treatment group. Parents were also reminded

that if they were placed in the control group, they would be offered a modified training after the treatment phase of the study.

To insure that the control group and treatment groups were comprised of an equal number of children with similar early reading skills, each classroom teacher was asked to place a check mark on the returned informed consent forms of the children they considered to have low early reading skills. Teachers' evaluations were based on their observations of children during pre-literacy classroom activities. Children were then placed into two groups within each classroom (low early reading skills vs. typical early reading skills), and randomly selected to one of the treatment groups.

From the three rural schools that participated in the study, six parents agreed to participate at School A, five at School B, and 20 at School C. The response rate at School C was higher, apparently because the kindergarten teacher chose to make follow-up phone calls, and encouraged parents to participate in the study. Teachers at the other schools stated they were uncomfortable making similar phone calls to parents. At the small urban school, School D, two parents participated from the full-day classroom, two from the PM classroom, and five from the AM classroom. One person assigned to the control group, from School C, moved to Maine during the third week of the baseline phase, resulting in a final sample size of 19 for the control group, and 20 for the treatment group.

Demographic information was obtained from the Parent Questionnaire (see Appendix E). Thirty-six out of the thirty-nine parents (92%) completed and returned the questionnaire. The Parent Questionnaire included questions regarding family

demographics (e.g., the number of family members in the home, and the history of reading problems within the family), literacy environment at home (e.g., the type of reading materials a parent typically reads during the week, and the number of times the parent typically reads with her/his child during a week), and child information (e.g., pre-school history and special services received at school). Descriptive information derived from this questionnaire is summarized in Tables 1-4.

The distribution of children in regard to age, gender, ethnicity, history of day care, language difficulties and medical issues was balanced across the two groups. The mean age for children in both groups was 6 years 2 months. The gender distribution for the control group was 50% male and 50% female. The treatment group consisted of 60% male children and 40% female children. Ethnicity for both groups was largely White/Caucasian, (90%). In the control group, one child was Hispanic and one child was bi-racial. One child in the treatment group was Asian Pacific, and one child was bi-racial. A history of language difficulties was also equally distributed across the two groups. Thirty percent of the children in the control group were reported to have experienced language difficulties as compared with 37% in the treatment group. For both groups, 11% of the children were reported to have a history of medical problems.

The mean number of people in the household for both groups was 4, the mean father's age for both groups was 38, and the mean age for the mother was 35 in the control group and 37 for the treatment group.

A t-test was conducted for mother's education level and revealed no significant differences across groups,  $t(34) = .74$ ,  $p > .05$  and for father's education level,  $t(33) =$

.80,  $p > .05$ . A chi-square for single or dual incomes also revealed no significant association between groups,  $X^2 (1 N = 36) = .003, p > .05$ .

The questionnaire revealed that 100% of the parents enjoyed reading. The type of print most frequently read in the home was a daily newspaper and children's books for both groups, followed by work-related material and novels. The time spent reading with the child per day ranged from 1 minute to over thirty minutes. Fifty per cent of parents in the control group read with their children for 10-20 minutes per day, 17% read with their children for 20-30 minutes per day, and 16% read with their children for more than thirty minutes per day. In the treatment group, 26% of parents read with their children for 10-20 minutes per day, and 42% read with their children for 20-30 minutes per day.

Table 1

Educational Level of Fathers and Mothers in Percentages by Group

Education	Control		Treatment	
	Father	Mother	Father	Mother
High School	29%	44%	28%	36%
2-Year College	12%	11%	39%	32%
4 Year College	29%	22%	11%	32%
Graduate Training	18%	17%	17%	0
Vocational Training	12%	6%	5%	0

Table 2

Marital Status and Number of Incomes Within Family by Group

Group	Marital Status			Single Income Household	Dual Income Household
	Single	Divorced	Married		
Control	6%	6%	88%	39%	61%
Treatment	5%	0%	95%	42%	58%

Table 3

Mean Number of People in Household, Language Spoken in the Home and Family History of Reading Disabilities by Group

Group	# of People in Household	Language Spoken At Home	Family History of Reading Disabilities
Control	4	English (100%)	29%
Treatment	4	English (100%)	24%

Table 4

Differences for Gender, Language Difficulties and Medical Difficulties by Group

Group	Mean Age	Gender		Language Difficulties		Medical Difficulties	
		M	F	Yes	No	Yes	No
Control	6.2	50%	50%	30%	70%	11%	89%
Treatment	6.2	60%	40%	37%	63%	11%	89%

Research Design

This project used both a single-subject time series design and a small group comparison design. A group comparison was used to examine effects. A simple phase-change element (A/B) design was incorporated to examine growth over time within the

thirty-nine children on measures of the DIBELS. This type of design consists of: "(a) establishment of the stability, level, and trend within the series of data points across time taken under similar conditions, (b) a change in the conditions impinging upon the client while maintaining consistency of measurement procedures, and (c) examination of concomitant changes in the stability, level, or trend in a series of data points taken under the new conditions" (Barlow, Hayes, & Nelson, 1984, p. 181). Thus, if a change in level is seen after the treatment is introduced, it is possible to draw conclusions that the treatment is responsible for the changes. Threats to the internal validity of the study, particularly maturation and history were controlled for by the no-treatment group. In addition, confounding variables such as classroom curricula and instruction were controlled through a random assignment to groups across classrooms.

### Baseline Phase

Baseline data were collected over three weeks and consisted of ten separate administrations of the DIBELS. The first three scores came from administrations of DIBELS probes during the first week, the next three were obtained during the second week, and the remaining four points in the third week. The collection of baseline data at School C began two weeks prior to the collection of baseline data at the other schools, due to the fact that parents from this school returned consent forms quickly, and a meeting time for the first training was easily established.

## Intervention Phase

The intervention phase lasted for 10 weeks. The DIBELS were administered to the thirty-nine children in the control and treatment groups once a week by the primary researcher. Every effort was made to administer the DIBELS during a time that direct instruction was not taking place in the classroom. Administrations typically occurred during circle-time at the beginning of each class. Each data collection session lasted approximately five minutes.

The parents in the treatment group participated in a series of five training sessions. Data collection for the treatment phase commenced immediately after the first training. Each training lasted approximately one hour and occurred once per week for five consecutive weeks. Parents were asked to incorporate specific activities into storybook reading with their children at home, and to do so four times a week for fifteen to twenty minutes each time.

## Independent Variable

The Independent Variable in this study was the absence or presence of a training for parents. The training focused on teaching parents phonological-based and letter-identification activities that they could present to their children after reading classical children's stories. Unlike other trainings, which have focused on language development and print awareness, this training asked parents to teach specific skills through a variety of exercises that focused on higher-level metalinguistic skills.

## Parent Training Procedures

Parents participated in five separate one-hour training sessions. The sessions were led by the primary investigator. Eight mothers and one couple from one of the rural schools participated in one group on five consecutive Wednesday nights (Group A), six mothers across the other two rural schools participated in another group on Tuesday nights (Group B), and three couples and two mothers from the small urban school participated in the final group on four consecutive Monday nights, and one Thursday night (Group C).

The overall training was designed to teach parents specific skills in phonological awareness and letter-identification skills, two of the crucial pre-reading skills described in the first chapter and supported by the research. Specifically, the phonological awareness training focused on the tasks presented in Marilyn Adams' (1990) hierarchy, and those skills specifically measured by the DIBELS, using a modified version of *The Sourcebook of Phonological Awareness Activities Through Children's Classic Literature* by Dr. Candace Goldsworthy (1998). This book includes phonological awareness activities and each chapter highlights one children's story, such as "Little Red Riding Hood," by incorporating vocabulary from the story into the specific activities.

Each chapter in the *The Sourcebook of Phonological Awareness Activities Through Children's Classic Literature* includes a range of activities at the word, syllable and phoneme level. The Home Activity Sheets were modified from these chapters to focus on the training skill for that week. For instance, the first training session focused on rhyming activities; thus the first Home Activity Sheet was comprised of rhyming items only. Once

the five training sessions were completed (the first five weeks of the intervention phase), the remaining five Home Activity Sheets included activities from all of the five training sessions, with an emphasis on phoneme activities. Phoneme manipulation, the final task on the Adams' hierarchy, was not included since this task is considered too difficult for the average kindergarten child. Activities for the training session on letter-identification and letter-sound correspondence were modified from *Phonics From A to Z* a Scholastic publication developed by Wiley Blevins (1998).

Prior to conducting training sessions with parents, a School Psychologist employed at a local Kindergarten center, and knowledgeable about phonological awareness, reviewed the training objectives and procedures for appropriateness of skill level, teaching procedures and activities. In addition, a parent of a first grade girl reviewed the teaching procedures and Home Activity Sheets, and practiced each teaching procedure, activity, and corrective procedure with her child. Both reviewers provided the primary researcher with feed-back and suggestions that were incorporated into the final training procedures.

Each training session began with a review of the preceding session's activities to maintain skill knowledge. In addition, the main researcher contacted each parent by phone once per week to answer any questions. Parents were also encouraged to call the researcher at home if any problems or questions arose during the week.

Each training session incorporated the same framework:

Training Procedures: The trainer presented the skill for the week. The five skill areas included rhyming, syllable splitting and blending, letter identification and letter-sound correspondence, onset fluency and phoneme segmentation and blending. Each training

session was scripted (see Appendix F for a sample script), and read by the researcher to insure consistency across trainings.

Materials: Materials for the week were distributed. Parents received scripts for the training and corrective procedures for the skill area (presented in Appendix G), the Home Activity Sheets (presented in Appendix H), and the corrective procedures for Home Activity Sheet activities (presented in Appendix I). Parents were directed to read the corrective procedure scripts after their child responded incorrectly to an item. The scripts contributed to the consistency of the training, as each parent introduced the skill to her/his child in the same way. During the first training, two additional hand-outs were presented to the parents, including an overview of reinforcement procedures (presented in Appendix J), and an overview of general corrective procedures (presented in Appendix K). These materials were then reviewed with the parents.

Practice and Role-Plays: After the primary researcher explained the week's skill, read the scripts for the teaching procedures and corrective procedures, and demonstrated the activities, parents divided into dyads and practiced. One parent acted as the parent and read the script for the teaching procedure. The other parent acted as a child, and answered the practice item incorrectly so as to give the "parent" an opportunity to practice the corrective procedure. This was also done for the first item of each activity on the Home Activity Sheet, so that parents had an opportunity to practice the corrective procedures for each activity. Roles were then reversed so that each parent had an opportunity to practice the teaching and corrective procedures. The trainer observed role-plays and provided feedback.

During the treatment phase of the study, each parent spent fifteen to twenty minutes a day for four days each week working with her/his child. For the ten weeks of treatment, the parents and children spent one night reading an assigned story, and three other nights completing Home Activity Sheets. During the five weeks of training sessions (the first five weeks of the treatment phase,) parents introduced the weekly skill to their children on the second night, and completed a Home Activity Sheet that included three activities that corresponded with the weekly skill. During the third and fourth nights, parents completed one Home Activity Sheet per night that included the same type of activities from the first sheet.

During the last five weeks, parents and children completed three Home Activity Sheets, per week. During these weeks, Home Activity Sheets included activities presented in the activity sheets from the preceding weeks.

The purpose of the training was not necessarily to pinpoint which session yielded the greatest gains, nor was it expected that any significant growth would be observed from the end of one session to the beginning of the next, since the skills the parents taught were considered additive. The data collected were intended to focus on overall growth over the 10 weeks of the intervention activities.

The researcher provided the parents with a copy of *A Treasury of Children's Literature* edited by Armand Eisen and published by Houghtin Mifflin. The Houghtin Mifflin publishing company donated 10 copies of the book for the study. This book was chosen because it was cited in *The Sourcebook of Phonological Awareness Activities Through Children's Classic Literature*, and the words from the stories were incorporated

into the home activities. Nine stories and five poems were used throughout the ten weeks of intervention.

By using a modified version of *The Sourcebook of Phonological Awareness Activities Through Children's Classic Literature*, the children's book cited by the author, the researcher was able to monitor the appropriate level of letters and sounds parents introduced to their children. This is important because as many researchers have pointed out, instruction in phonological awareness should follow certain guidelines in order to be most effective. For instance, Smith, Simmons and Kameenui (1997), emphasize the importance of providing appropriate instruction by being cognizant of the word length (longer words are more difficult) the consonant clusters in a word (more clusters are more difficult) and the use of continuous and stop sounds (continuous sounds are more difficult). In addition, they discuss the importance of explicitly modeling phonological awareness skills prior to student practice and providing instruction first at the word level and concluding with instruction at the phoneme level. *The Sourcebook of Phonological Awareness Activities* follows these instructional strategies by introducing words and sounds systematically and strategically based on the research in this area.

If a parent missed a session, the researcher contacted her/him to re-schedule the session individually. During re-scheduled sessions, material was presented in the same way as the original session, with the researcher presenting the skill, reading the script, and engaging in a role-play with the parent. Two parents from School C re-scheduled the first training, and one parent from School A re-scheduled the second training session.

The general objectives for each of the five sessions are introduced below. A more detailed description of individual objectives is included in Appendix L.

Training One Objective: Through trainer instruction, parents will learn about the overall objectives of the 5 training sessions, the role of language, letter-identification and phonological awareness in beginning reading, tips for handling frustration, and reinforcement and corrective procedures. Through role-playing, parents will demonstrate an understanding of incorporating rhyming tasks into home-based literacy activities.

Training Two Objective: Through role-playing, parents will demonstrate an understanding of incorporating syllable tasks into home-based literacy activities.

Training Three Objective: Through role-playing, parents will demonstrate an understanding of incorporating letter identification and letter-sound correspondence tasks into home-based literacy activities.

Training Four Objective: Through role-playing, parents will demonstrate an understanding of incorporating onset fluency tasks into home-based literacy activities.

Training Five Objective: Through role-playing, parents will demonstrate an understanding of incorporating phoneme blending and segmentation tasks into home-based literacy activities.

### Dependent Variables

A number of dependent variables were used in the study to measure early literacy skill development and parent satisfaction with the training. To measure the early literacy development of the children, three measures (Onset Fluency, Letter Naming Fluency and

Phoneme Segmentation) from the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) were administered on a weekly basis. See Appendix M for sample probes for each measure. To measure treatment acceptability, evaluations for each training were completed at the end of each training, and parents completed a Parent Satisfaction Survey at the end of the study. Treatment integrity was measured through the completion of Home Activity Sheets and weekly phone calls to the parents.

### Dynamic Indicators of Basic Early Literacy Skills (DIBELS)

The main dependent variable consisted of scores on three measures of the Dynamic Indicators of Basic Early Literacy Skills (DIBELS), Onset Fluency, Letter-Naming Fluency and Phoneme Segmentation Fluency. The DIBELS is a type of Curriculum Based Measurement (CBM) that can be used to make educational decisions in a problem-solving model (Kaminski & Good, 1998). Like CBM, the DIBELS is a reliable and valid measure, is simple and efficient to administer, and is sensitive to improvement in student's skills over time. The DIBELS consists of short probes in the areas of Onset Fluency, Letter-Naming Fluency and Phonemic Segmentation Fluency. A fourth indicator, Nonsense Words, is appropriate for children in the first grade, and was not included in this study. There are 20-25 different probes composed of comparable stimuli within each skill-area. Each probe takes between one and three minutes to administer (Kaminski & Good, 1998).

The Onset Recognition Fluency probes measure a child's ability to identify the first sound in a word. Each probe consists of 16 questions. For every four questions, the child

is presented with a sheet consisting of four pictures of objects that are orally named for the child. The first three questions are in the format, "Which picture begins with /S/?" The final question requires the child to provide the initial sound of the word that corresponds to the fourth picture, e.g., "what sounds do 'broom' begin with?" Each correct response is worth one point, for a total of 16 points. The administration is complete when the child has answered the last item. If the child does not respond within 5 seconds, the administrator provides the correct response and proceeds to the next item. The benchmark score for children in the winter of their kindergarten year is 20-25 correct onsets/minute (Good, 1999). The reliability for one probe is .65 and the reliability for five probes is .90 based on Spearman-Brown prophecy formula (Kaminski & Good, 1998).

The Letter-Naming Fluency probes measure speed and accuracy of letter-identification. Each probe consists of 110 upper and lower case letters displayed on an 8 1/2" x 11" sheet of paper across eleven rows. The child is required to name as many letters as she/he can within one minute. If the child does not identify a letter within 3 seconds, the administrator identifies the letter to the child, scores the letter as incorrect, and the child continues with the next letter in the row. The child's score is the number of correct responses within the minute out of a total of 110 items. The reliability for 1 probe is .93, and .98 for 3 probes. In a one-year predictive validity study, correlations with reading criterion measures were shown to be .72-.98 (Kaminski & Good, 1998).

Phonemic Segmentation Fluency measures a child's ability to segment words into component parts (e.g., "cat" into /k/ /a/ /t/). The child is presented with a word and required to break the word into its sounds or phonemes. The administration is

discontinued if the child fails to correctly answer five consecutive items. A score of 35-45 phonemes/minute is considered appropriate for children entering the first grade (Good, 1999). The reliability of 1 probe is .88 and for 3 probes is .96 based on Spearman-Brown prophecy formula (Kaminski & Good, 1998).

Other dependent variables were used to measure treatment acceptability and treatment integrity. Treatment acceptability is important to measure because if the parent does not feel comfortable with the treatment there is a greater risk that the intervention will not be implemented correctly. In addition, if treatment acceptability is low, there is a reduced chance that the parent will continue with the intervention once the research has terminated.

## Evaluation Forms

Parents completed an evaluation form at the end of each session (see Appendix O). This questionnaire used a Likert-type format that elicited information regarding the design and delivery of the training session, the comfort parents felt in asking questions, the usefulness of role-plays, and the parents overall perceived level of understanding of the session's main objectives.

## Parent Satisfaction Survey

Parents completed a survey to assess their satisfaction with the training and their subsequent comfort level and perceived ability in implementing the training goals. The survey consisted of questions designed to evaluate the overall instruction in terms of

curriculum delivery, appropriateness of materials and time-frame, the usefulness of the role-plays in preparing parents for the home activities, the communication between trainer and parents, including the usefulness of problem-solving, and the parents' perceived ability to use the skills they learned from the training in future work with their children. The Parent Satisfaction Survey is presented in Appendix N.

Treatment integrity refers to the correct implementation of training objectives by the parents. Treatment integrity checks were conducted via weekly telephone calls to the parents. During these calls, the researcher answered any question the parent had regarding correct implementation procedures. Integrity also was monitored through a checklist on the Home Activity Sheets. Parents were required to indicate if they implemented training procedures correctly (based on the script and the role-play), and if they correctly implemented corrective procedures for incorrect child responses. Parents were also required to indicate if they felt comfortable with their presentation of material and corrective procedures. During the week, parents completed the sheet with the purpose of monitoring discomfort with any of the corrective procedures for any given activity.

### Home Activity Sheets

The purpose of the Home Activity Sheet was to provide parents with specific activities related to the objectives and subsequent activities from the session. The sheet also was used as a self-monitoring tool for the parents to indicate if they implemented training procedures and corrective procedures correctly, and if they felt comfortable with the material they presented. Comfortable was defined as “confidence that material was

presented like the role-play or script, and a belief that the parent felt she/he understood the material and could answer a content-related question from the child.” If a parent stumbled during the presentation, could not answer a question from the child, and/or felt that the material was inappropriate (e.g. too wordy or too difficult for the child), the parent was instructed to indicate discomfort on the sheet. The self-monitoring on the sheets was employed to monitor the consistency between home delivery and parent performance during the role-play. During the weekly phone call, the sheet was an easy way for parents to problem-solve with the researcher because they had marked the specific activities they felt were problematic during each session. This procedure also helped control for treatment integrity.

A third purpose of the sheet was for the parent to record the child's response to each item. Parents were instructed to use the corrective procedure for each incorrect response, and to discontinue an activity if the child incorrectly answered three items in a row. Parents were instructed to call the researcher if this occurred after the weekly check-in so that the researcher could individualize the procedures for the child experiencing difficulty.

## CHAPTER 4

### RESULTS

This section presents the results for each research question, beginning with those pertaining to the dependent measures on early literacy (e.g., Onset Fluency, Letter-Naming Fluency, and Phoneme Segmentation). Both group and individual level results are presented for these questions. Finally, results are presented regarding questions pertaining to the treatment integrity and treatment acceptability of the study.

#### Group Results

The first two questions focused on the effects of training parents in specific phonological awareness and letter-identification reading readiness skills during home-based parent-child activities with their kindergarten children. The following research question at the group level was addressed first:

Question 1: On average, is the treatment slope and level for children whose parents participated in the intervention significantly different from the treatment slope and level for those participants in the control group on measures of (a) Onset Fluency, (b) Letter-Naming Fluency, and (c) Phoneme Segmentation?

## Descriptive Statistics

Descriptive statistics for the slope of scores on the three dependent measures of the DIBELS are presented for both the control and the treatment groups. The slope was calculated for each child using instructional day as the independent variable, and the score as the dependent variable. The slope value represents the change in correct onsets per minute over time for the Onset Fluency measure, the change in correctly identified letters per minute over time for the Letter-Naming Fluency measure, and the change of correct phonemes per minute over time for the Phoneme Segmentation Fluency measure.

On the Onset Fluency measure, the mean slope for the control group during baseline was a .34 gain in correct onsets per administration and a .19 gain during the intervention phase. For the treatment group, the mean slope was a .20 gain during baseline and a .52 gain in correct onsets per administration during the intervention phase.

The mean slope for the Letter-Naming Fluency measure for the control group during baseline was a positive change of .003 correct letters per administration, and a negative change of -.0007 during the intervention phase. For the treatment group, the mean slope during baseline was a .007 gain, and a .18 gain of correct letters per administration during the intervention phase.

The control group's mean slope on the Phoneme Segmentation measure during baseline was a .12 gain of correct phonemes per administration and a .14 gain during the intervention phase. The mean baseline and intervention slope for the treatment group was a .11 and a .83 gain of correct phonemes per administration respectively. These mean

scores and standard deviations are presented in Table 5 for each measure by group and phase.

Table 5

Mean Slope Scores and Standard Deviations for DIBELS Measures by Group

Measure	Group	Baseline		Intervention	
		M	(SD)	M	(SD)
Onset Fluency	Control	.34	(.35)	.19	(.009)
	Treatment	.20	(.25)	.52	(.19)
Letter-Naming Fluency	Control	.003	(.22)	-.0007	(.008)
	Treatment	.007	(.18)	.18	(.21)
Phoneme Segmentation	Control	.12	(.22)	.14	(.18)
	Treatment	.11	(.25)	.83	(.33)

Data also were compiled to describe both mean scores and end of phase median scores for both groups across phase and measures. The medians of the last three scores during each phase were used to compare end of phase performance between the groups. These data are presented in Table 6.

The end of phase median for the Onset Fluency measure during baseline was 23 correct onsets per minute for the control group, as compared to the median of 19 correct onsets per minute for the treatment group. During the intervention phase, the median for the control group and treatment group was 31 and 39 correct onsets per minute respectively.

On the Letter-Naming Fluency measure, the end of phase median during baseline was 36 correct onsets per minute for the control group and 29 correct onsets for the treatment group. During the intervention phase, the median scores for both the control group and the treatment group was 40 correct onsets per minute.

The end of phase median during baseline for the Phoneme Segmentation measure was 7 correct phonemes per minute for the control group and 12 for the treatment group. During the intervention phase, the median score was 6 correct phonemes per minute for the control group and 37 correct phonemes for the treatment group.

Table 6

Descriptive Statistics For DIBELS Measures by Group

Dependent Measure	Group	Baseline			Intervention		
		M <sup>a</sup>	SD	MD <sup>b</sup>	M <sup>a</sup>	SD	MD <sup>b</sup>
Onset Fluency	Control	21	7.8	23	28	11.5	31
	Treatment	18	6.7	19	32	8.5	39
Letter-Naming Fluency	Control	36	10	36	40	13	40
	Treatment	29	15	29	38	17	40
Phoneme Segmentation	Control	7	6.8	7	10	7.5	6
	Treatment	6	6.0	12	22	10.5	37

Note. n=19 for control and n = 20 for treatment

<sup>a</sup> Mean of all scores in the phase. <sup>b</sup> Median of last three scores in the phase.

### Analysis of Covariance (ANCOVA) for Slope and Effect Sizes

The parent training intervention effectiveness was examined initially via Analysis of Covariance of intervention phase slopes between groups. Prior to conducting these ANCOVAs, a number of tests were run to determine the appropriateness of this analysis (e.g., a test of normality). Results of these “pre-tests” are summarized in Appendix P. Ultimately, ANCOVA was determined to be an appropriate analysis for the data on the dependent measures associated with the DIBELS. For the ANCOVA, the scores during the treatment phase were used as the dependent variable and the scores during baseline as the covariate. By partitioning out the baseline scores, it is possible to adjust for baseline differences by group, and to more accurately reveal any differences as a result of the treatment. The ANCOVA ultimately revealed that the test of covariate was not significant for any of the three measures. For all analyses, an a priori alpha level of .05 was used as a criterion for concluding significant differences exist across groups. Alpha levels of .01 and .001 also are utilized where appropriate.

The results for the ANCOVA for Onset Fluency are presented in Table 7. The main effect for the treatment group was significant,  $F(1,36) = 46.25, p < .001$ .

Table 7

ANCOVA Summary Table: Group Differences on Treatment Slope for Onset Fluency

Source	df	Sum of Squares	Mean Square	F
Baseline Level (Covariate)	1	.00265	.002.65	1.16
Treatment Group	1	1.056	1.056	46.25***
Error	36	.822	.002284	
Corrected Total	38	1.9		

Note. Type III Sum of Squares used.

\*\*\*  $p < .001$

The results of the ANCOVA for the Letter-Naming Fluency measure are presented in Table 8. The main effect of the intervention for the treatment group was significant,  $F(1,36) = 66.5, p < .05$ .

Table 8

ANCOVA Summary Table: Group Differences on Treatment Slope for Letter-Naming Fluency

Source	df	Sum of Squares	Mean Square	F
Baseline Level (Covariate)	1	.0063	.0063	2.505
Treatment Group	1	.361	.361	14.278*
Error	36	.91	.0025	
Corrected Total	38	1.3		

Note. Type III Sum of Squares used.

\*  $p < .05$

The results of the ANCOVA for Phoneme Segmentation are presented in Table 9. Results again were significant by treatment group,  $F(1,36) = 66.49, p < .001$ .

Table 9

ANCOVA Summary Table: Group Differences on Treatment Slope for Phoneme Segmentation

Source	df	Sum of Squares	Mean Square	F
Baseline Level (Covariate)	1	.00416	.00416	.590
Treatment Group	1	4.7	4.7	66.49***
Error	36	2.543	.007065	
Corrected Total	38	7.275		

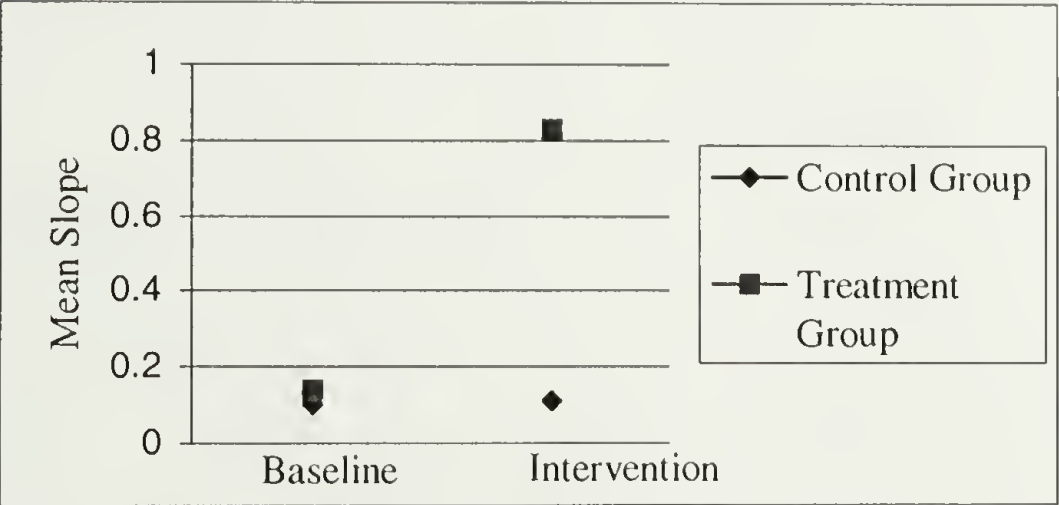
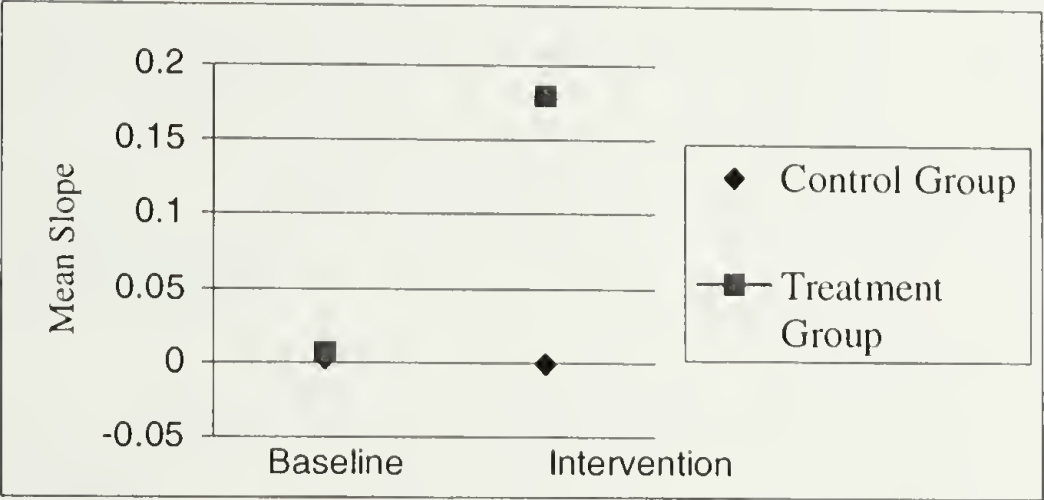
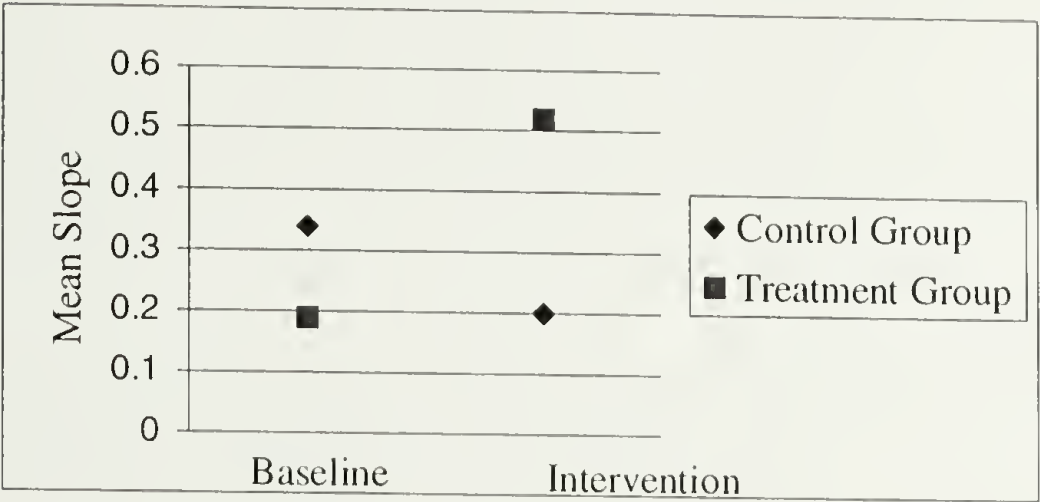
Note. Type III Sum of Squares used.  
\*\*\*  $p < .001$

An Eta Squared analysis was used to determine effect sizes for testing means. Cohen’s (1988) standards were applied in the analysis of effect sizes, where .20 indicates a small effect size, .50 indicates a medium effect size, and .80 indicates a large effect size. Medium effect sizes were revealed for the measures of Onset Fluency and Phoneme Segmentation (.562 and .65 respectively), and a small effect size of .284 was revealed for the Letter-Naming Fluency measure. The effect size, when combined with a statistical significant p value, provides further evidence that it is the intervention that contributes to the differences between the two groups, in addition to the sample size and variance.

Finally, visual representation of the changes between treatment phases by group is provided. Figure 4 presents the overall average slope for each group during baseline and intervention phases by dependent measure.

Figure 4

Average Slope Scores by Group for Baseline and Intervention Phases for the Measures of Onset Fluency, Letter-Naming Fluency and Phoneme Segmentation



Analysis of Covariance (ANCOVA) for Level

To compare representative phase scores across groups, the median of the last three scores during baseline and the median of the last three scores during the intervention phase were computed across groups. An ANCOVA again was used, with the treatment scores used as the dependent variable and the baseline scores as the covariate. For those ANCOVAs where the covariate was significant, the final analysis reflects results after baseline scores were adjusted. Prior to conducting the ANCOVA's, basic assumptions of normality and homogeneity of variance were tested and met. (See Appendix Q).

The results for Onset Fluency are presented in Table 10. An ANCOVA revealed that the covariate was significant,  $F(1,36) = 81.12, p < .001$ . Significant differences also were found by group for the intervention phase,  $F(1,36) = 41.17, p < .001$ , with significance for the treatment group.

Table 10

ANCOVA Summary Table: Group Differences on Treatment Level of Onset Fluency

Source	df	Sum of Squares	Mean Square	F
Baseline Level (Covariate)	1	3107	3107	81.12***
Treatment Group	1	1577	1577	41.17***
Error	36	1379	38.31	
Corrected Total	38	5210		

Note. Type III Sum of Squares used.

\*\*\*  $p < .001$

Results of the ANCOVA for level for the Letter-Naming Fluency measure are presented in Table 11. Results indicate that the test of covariate was significant,  $F(1,36) = 183, p < .001$ . Significant differences also were found by group for the treatment group,  $F(1,36) = 12.71, p < .01$ .

Table 11

ANCOVA Summary Table: Group Differences on Treatment Level of Letter-Naming Fluency

Source	df	Sum of Squares	Mean Square	F
Baseline Level (Covariate)	1	6960	6960	183***
Treatment Group	1	484	484	12.72**
Error	36	1370	38.06	
Corrected Total	38	8331		

Note. Type III Sum of Squares used.

\*\*\*  $p < .001$ , \*\*  $p < .01$

The results of the level comparison for Phoneme Segmentation are presented in Table 12. Results indicate significant differences by treatment group during baseline phase (covariate),  $F(1,36) = 29.78, p < .001$  and intervention phase,  $F(1,36) = 85.75, p < .001$ . For both baseline and intervention phases, significant differences were found across the treatment group, therefore making the ANCOVA a powerful analysis for treatment group differences.

Table 12

ANCOVA Summary Table: Group Differences on Treatment Level of Phoneme Segmentation

Source	df	Sum of Squares	Mean Square	F
Baseline Level (Covariate)	1	2352	2352	29.78**
Treatment Group	1	6772	6772	85.75**
Error	36	2843	78.97	
Corrected Total	38	11642		

Note. Type III Sum of Squares used.

\*\*  $p < .001$

Individual Results

In addition to examining the study’s results at a group level (i.e., Control Group vs. Treatment Group), results also were examined for individual children. Specifically, the next questions analyze data at an individual level to determine the extent of changes for individual children on the dependent measures of Onset Fluency, Letter-Naming Fluency and Phoneme Segmentation. These analyses were conducted on slope differences within subjects. Two primary questions, then, are addressed in the section that follows.

- Question # 2

For the individual children whose parents participated in the intervention, how many experienced changes in slope of progress between baseline scores and intervention scores on measures of the Dynamic Indicators of Basic Early Literacy Skills?

- Question # 2A

For the individual children in the control group, how many experienced changes in slope of progress between baseline scores and intervention scores on measures of the Dynamics Indicators of Basic Early Literacy skills?

These questions examine the extent of change in the slopes of individual children between the baseline and intervention phases of the study. A one-tailed t-test using an alpha level of .01 indicated a change in slope larger than 2.33 as significant growth. A conservative value was used because multiple t-tests were conducted, and using a .01 level rather than a .05 level helps guard against making a Type I error. A one-way t-test was used instead of a two-way test because the primary purpose was to distinguish positive growth over time in the intervention phase. Despite this purpose, results indicting the presence of positive, negative and zero growth were found across the children. These results, as well as results for significant changes on each of the dependent measures are presented in Table 13. A table presenting the actual numerical slope change between phases for each subject is provided in Appendix R.

For Onset fluency, six children in the control group experienced positive growth (an increase in the number of correct onsets per minute over time), 12 experienced negative

growth (a decrease in the number of correct onsets per minute over time), and one child experienced no growth over time. Positive growth ranged from an increase of .38 to 4 correct onsets per minute over each administration for children in the control group. Within this range, two of the slope scores were significant (a growth rate of 3.6 and 4 onsets per minute over time).

In the treatment group, 18 of the children experienced positive gains of .18 to 17 onsets per minute per administration in Onset Fluency skills. Eight of the children experienced statistically significant gains with a growth range of 2.8 to 17 correct onsets for each administration. One child experienced negative growth and one child experienced no growth in this group.

On the Letter Naming Fluency task, positive slopes were obtained for nine children in the control group with an increase of .18 to 2.7 letters per minute over each administration in letter-naming skills. Of these positive slopes, one was significant. Nine children experienced negative growth between the baseline and intervention phase and one child experienced no growth between the two phases. In the treatment group, positive slopes for 11 children with a gain of .33 to 2.9 letters per administration were noted, with four of the positive scores significant with growth rates on Letter-Naming Fluency skills ranging from 2.7 to 2.9 correct letters per minute over time. Nine of the children in this group experienced a negative slope between the baseline and intervention phases.

On the Phoneme Segmentation task, none of the children in the control group experienced significant growth, and nine of the children experienced a positive growth rate ranging from .04-2.2 phonemes per minute in Phonemic Segmentation fluency skills. In this group, five

children experienced negative growth and five children experienced no growth. For the treatment group, 11 of the children experienced significant growth, with a gain of 4.1-46 phonemes per administration for the 13 weeks they were measured, and 15 experienced positive growth, with an increase of 1-46 correct phonemes per minute over time. Five children in this group experienced no growth between the baseline slope and intervention slope. None experienced negative change.

Table 13

Individual Changes in Slope Scores on the DIBELS By Group

Growth	Onset Fluency		Letter-Naming Fluency		Phoneme Segmentation	
	C	T	C	T	C	T
Positive Growth	6	18	9	11	9	15
Statistically Significant Growth	2	8	1	4	0	11
Negative Growth	12	1	9	9	5	0
No Growth	1	1	1	0	5	5

Note. C = control group; T = treatment group

In addition to answering the research questions, these data are helpful in answering progress monitoring questions and informing potential interventions for children who remain at risk- for early literacy skill acquisition. The data for four children (two from each of the groups) are highlighted in a case-study format to illustrate how the DIBELS can be used in a problem-solving model. The case-studies are presented in Appendix S.

## Social Validity Results

A secondary purpose of this research is to examine issues of social validity. First, treatment integrity is examined to determine if training objectives were correctly implemented by the parents in the treatment group. In addition, information was gathered to determine the level of comfort in the implementation of treatment objectives.

Examining treatment integrity is important because if parents teach information to their children in the way it was intended by the researcher, the results can be interpreted with more confidence.

### Treatment Integrity

In regard to treatment integrity, the following questions are addressed:

Question 3: To what degree did parents involved in the training perceive that they correctly implemented the teaching procedures during the home-based activities on measures of the Home Activity Sheets?

Question 3A: Did parents feel comfortable with the implementation of teaching procedures during the home-based activities on measures of the Home Activity Sheets?

Question # 3 addresses treatment integrity by examining parent perception about their implementation of the teaching procedures at home with their children. During the first five weeks of the training, when parents were required to teach a skill to their children,

parents self-monitored their presentation of teaching procedures as well as their comfort in the presentation. Parents were asked to respond to the question: “ Did you present the teaching procedures in the same way that you presented them during role-play activities?” and “Were you comfortable with your presentation?” Each question elicited a “yes” or a “no” response.

The question was revised for parents in Group C due to the fact that role—play activities were terminated for this group after training session 2. Instead, parents were asked to respond to the question: “Did you present the teaching procedure as it was written in the script?” and “Were you comfortable with your presentation?” Parents in the other groups also followed a script, but during role-play activities they had an opportunity to practice the script, receive feed-back from the primary researcher, and discuss potential problems and their solutions that might arise at home (e.g., a child’s misunderstanding of a procedure.) For instance, during role-play activities during training five (phonemes), parents in Group A were concerned that their children would confuse the concepts of syllables and phonemes. This precipitated a discussion on ways to differentiate the two concepts with their children.

Overall, parents perceived they implemented the teaching procedures in the way they implemented them during role-play activities (Groups A and B) and the way they were written in the scripts (Group C for weeks 3,4, and 5). With the exception of one parent who reported she did not implement the procedures in the same-way as a role-play activity, and four parents who did not respond to the question over the five weeks of training, the parents indicated that their implementation of teaching procedures was

identical to those outlined in either the role-play or the script. Summary data of parent responses to these questions are presented in Table 14.

Table 14

Parents’ Responses to Correct Presentation of Teaching Procedures to Their Children in Percentages

Training Session	Percent Yes	Percent No	Percent No Reply
All Groups <sup>a</sup>			
1	100	0	0
2	100	0	0
Groups A and B <sup>b</sup>			
3	93	0	7
4	93	0	7
5	86	7	7
Group C <sup>c</sup>			
3	100	0	0
4	100	0	0
5	100	0	0

<sup>a</sup> 20 people total. <sup>b</sup> 15 people total. <sup>c</sup> 5 people total

In addition to reporting on their perception of correctly implementing procedures, parents also were required to report on their comfort in implementing the procedures at home. Comfort was defined as “confidence that material was presented like the role-play or script, and a belief that the parent felt she/he understood the material and could answer a content-related question from the child.” In rating their comfort, parents also were instructed to consider time-factors and level of difficulty.

Parents rated their comfort in presenting teaching procedures in the same way they rated their perception of correct implementation of procedures. Parents were asked to respond to the question “Were you comfortable with your presentation of the teaching procedures?” Response choices were a “yes” or “no.”

The following results are based on the number of parents’ responses for the given choices, as well as the number of parents who did not reply to this question. As before, Group C’s comfort was based on the presentation of a script for training sessions three, four and five. Groups A and B were based on comfort in the presentation based on the role-play activities which incorporated scripts and feedback from the primary researcher.

Again, the majority of parents in groups A and B and group C reported that they were comfortable with their presentation of material. Throughout the five training sessions, and across the three groups, five no-responses were obtained. Aside from these no-responses, two parents reported discomfort with the implementation of teaching procedures during training session 5. One of the parents who responded negatively stated that her discomfort was based on the fact that she did not want to follow-through with the corrective procedure for the teaching procedures because she felt her daughter answered incorrectly as a result of the mother’s trouble accurately pronouncing certain sounds, such as the /a/ in far. At this point, it was established that the child’s response should not be considered incorrect because of pronunciation. Across training sessions and groups, the remainder of the parents reported comfort in their implementation of teaching procedures. Summary data of parent responses to these questions are presented in Table 15.

Table 15

Parents’ Responses to Comfort of Presentation of Procedures to Their Children in Percentages

Training	Percent Yes	Percent No	Percent No Reply
All Groups <sup>a</sup>			
1	100	0	0
2	100	0	0
Groups A and B <sup>b</sup>			
3	93	0	7
4	93	0	7
5	80	13	7
Group C <sup>c</sup>			
3	80	20	0
4	80	20	0
5	100	0	0

<sup>a</sup> 20 people total. <sup>b</sup> 15 people total. <sup>c</sup> 5 people total

The Home Activity Sheets also were used to examine treatment integrity, since parents indicated if they implemented corrective procedures in the way they were practiced during role-play activities, and indicated the presence or absence of comfort in the implementation. The Home Activity Sheets also provided descriptive statistics in regard to the number of items completed and the number of incorrect items. The following section provides information on the Home Activity Sheet procedures, descriptive results, and answers the following questions:

Question 3B: To what degree did parents involved in the training perceive that they correctly implemented the corrective procedures during the home-based activities on measures of the Home Activity Sheets?

Question 3C: Did the parents feel comfortable with the corrective procedures during the home-based activities on measures of the Home Activity Sheets?

The Home Activity Sheets consisted of one weekly activity sheet for each of the ten weeks of the intervention phase. In total, 16 activities were included. During the first five weeks, the Home Activity Sheets consisted of activities relevant to the training skill (e.g., for week 1, all of the activities incorporated rhyming). After week 5, the Home Activity Sheets consisted of activities from the proceeding five weeks, with more emphasis placed on phonemic activities. Each activity sheet consisted of either three or four activities with a total of 25-40 items per sheet. The directions for each activity are presented in Appendix T.

A total of 18,660 items were completed (98% of the total) and 7% of these items were answered incorrectly, eliciting the correction procedures. The number of activities within a given category, the number of items completed within this category, the number of incorrect items, and the mean time to complete an activity within a given category are presented in Table 16.

Table 16

Number of Activities, Total Number of Items Answered, Number of Items Answered Incorrectly, and Mean Time for Completion for the Total Number of Home Activity Sheets

Activity	Number of activities <sup>a</sup>	Number of items answered/total number of items	Number of items answered incorrectly	Mean time for completion <sup>b</sup>
Recognizing Rhyme	3	500/500	21	3.5
Matching Rhyme	3	500/500	41	5.2
Identifying Rhyme	4	683/700	52	6.3
Oddity				
Syllable Counting	5	897/900	67	3.4
Syllable Blending	7	1300/1300	50	3.2
Syllable Splitting	5	890/900	74	3.8
Tracing and forming letters	15	2856/3000	11	5.1
Hear the Sound	14	2768/2800	105	2.4
Matching Initial	6	1090/1100	33	3.2
Sound to Word				
Sound Matching	6	1082/1100	33	3.6
Initial Sound in Words	4	690/700	20	3.1
Segmenting Final Sounds in Words	7	1380/1400	72	3.3
Blending Sounds in Words	7	1335/1400	207	6.2
Identifying all Sounds	14	2689/2800	515	7.4

<sup>a</sup> Total number of activities presented throughout the ten Hone Activity Sheets. <sup>b</sup> Time in minutes.

For each activity that the child answered incorrectly, the parent was asked to engage in a specific corrective procedure. Each activity had its own corrective procedure. Corrective procedures were written as a script for the parent, and were practiced during role-play activities at the end of each training session. If the child answered incorrectly, the parent was instructed

to complete the corrective procedure, and was requested to respond with a “yes” or a “no” to the question, “were corrective procedures presented like the role-play?”

During the third training, a number of parents indicated that their child had self-corrected, and as a result, the parent never had an opportunity to present the corrective procedure. Parents thus were requested to write “self-corrected” in the space. If a parent did not respond, the answer was recorded as “no reply.” For training sessions three, four and five, parents in Group C reported correct implementation of corrective procedures based on the script, rather than the role-play activities, due to the fact that parents in this group did not participate in role-play activities after training two.

The number of responses (“yes”, “no”, “self-correct”, and “no reply”) and the corresponding percentages are presented in Appendix U. The number of items completed and the number of incorrect responses for each Home Activity Sheet is presented in Table 17.

Parents reported that for the most part they implemented corrective procedures at home in the same way as during role-play activities. The highest percentage of responses indicating that parents complied with corrective procedures occurred during week 1 (92%) and the lowest occurred during week 5 (68%). Towards the beginning of the training, parents were reporting a lack of child self-correction. By the end of the training, children were self-correcting with greater frequency. For instance, during the third week, parents reported that children self corrected for 8% of incorrect items. By the tenth week, 15% of the parents in Groups A and B reported self-correction and 29% of the parents in Group C reported self-correction. Parents indicated that self-corrections were initiated

immediately before the parent began the corrective procedure, and suggested that their facial expression alerted the child that her or his answer was incorrect. One parent stated that she thought her child self-corrected because she did not want to listen to the corrective procedure, and that an incorrect response did not appear to be a result of a skill deficit.

Results indicate that parents generally felt comfortable with their presentation of the corrective procedures for most items. Parents reported comfort for 63-93% of the times they implemented corrective procedures. For instance, during training one, parents indicated comfort in implementing corrective procedures for 89% of the incorrect responses. As with the proceeding section, the number of “yes” responses were inversely related to the number of self-correct responses, generally because parents were instructed to endorse self-correct responses under this category if their child self-corrected. Despite this instruction, certain parents endorsed other options (i.e. “yes”) even if their child self-corrected. Thus, by week 10, the yes responses decreased while the self-correct responses increased. Parents were least comfortable with their presentation of corrective procedures during week 5. One possibility for this is that the highest number of incorrect responses were reported during that week, (the week phoneme blending and segmenting was introduced), and parents reported feeling bored with the repetition of the corrective procedures.

Table 17

Total Number of Items Completed Per Home Activity Sheet, Number of Incorrect Responses, and the Percent of Incorrect Responses

Activity Sheet	Completed Items/Total <sup>a</sup>	Number of Incorrect Responses	Percent of Total
1	1482/1500	111	7.4
2	1487/1500	100	6.7
3	2363/2400	48	2.0
4	1500/1500	83	5.5
5	1658/1800	257	15.5
6	2089/2200	152	7.3
7	2088/2200	216	10.3
8	1980/2000	128	6.5
9	2190/2200	125	5.7
10	2000/2000	136	6.8
Total	18837/19300	1356	7.2

<sup>a</sup> Based on twenty activity sheets with an item range of 25-40 per activity sheet.

Treatment Acceptability

Treatment acceptability, like treatment integrity is another component of social validity, and concerns participant satisfaction. Conceptually, it is believed that treatment acceptability increases the likelihood that training components will be implemented in an appropriate manner because participants will be more motivated to follow procedures if they find the training useful and feasible. Treatment acceptability results also inform the design of more effective future research. Treatment acceptability was evaluated through evaluations of individual training sessions and an overall Parent Satisfaction Survey. The following questions therefore examine parent satisfaction with the individual training sessions and the overall training procedure.

Question 4: How did the parents involved in the training rate their satisfaction with the procedural aspects of each training, as measured by the Training Evaluation Forms?

Question 4A: How did the parents involved in the training rate their satisfaction with the procedural aspects and effects of the training, and their comfort in implementing the home-based activities, as measured by The Parent Satisfaction Survey?

Parents completed evaluation forms at the end of each of the five training sessions. All training evaluations were collected at the completion of each training session. Parents who missed a training session, and attended an alternative training with the primary researcher, also completed evaluations. A 100% return rate was achieved for the training evaluations.

The purpose of the evaluations was to assess parents' satisfaction with the presentation of material, as well as parents' level of perceived comfort on asking questions, and implementing the material at home. The evaluation consisted of seven items, which required a Likert-scale response of "yes", "somewhat", or "no". A summary of the responses for the evaluations is reported below. Responses and percentages for each item per session evaluation are reported in Appendix V.

Parents' responses varied depending on the training session and content of the training. For instance, parents' level of comfort in making comments or asking questions during the training increased over time. During the first session, 65% of the parents

indicated comfort, whereas 100% of the parents indicated comfort for the remaining four training sessions. This increase is likely the result of familiarity between the trainer and the participants over time. In a similar vein, more parents reported that information was presented clearly as the training progressed. After the first training session, 85% of the parents reported that information was presented clearly, and by the fifth training, 100% of the responses indicated that information was presented clearly.

Responses indicating that parents learned something new about the particular training content also increased over time. For instance, during the first three training sessions (rhyming, syllables and letter-sound correspondence) only 55-60% of the parents indicated new knowledge after the session, whereas 80-90% of the parents indicated new knowledge during the sessions on onset and phoneme skills. This increase over time makes sense given that the concepts of rhyming and syllables are familiar to most people, whereas phonemic awareness is a more obscure concept.

Two items yielded information on the helpfulness of role-plays during the training sessions evaluations. After the second training session, parents from Group C decided they did not want to continue with the role-play activities. One parent reported she felt uncomfortable engaging in the role-play activities with other adults. As a result, role-plays were not included during the remaining three training sessions for Group C. Parents in Group A and Group B reported that they wanted to continue with the role-play activities. As a result, items 3 and 4 were not answered by parents in Group C.

In general, parents were satisfied with the role-play activities, although these two items elicited more “somewhat” and “no” responses than the other items on the

evaluation. For instance, during training 1 (rhyming), only 65% of the parents responded that they found the role-play activities helpful, whereas 35% found them only somewhat helpful. During the other training sessions, at least one parent indicated the role-play activities were not helpful, although the majority of parents did indicate satisfaction with the role-play activities.

The majority of parents indicated they felt comfortable presenting teaching procedures and completing home activity sheets after each training. During the first training, comfort responses were lower (65% yes, 35% somewhat) than responses during the other sessions (100% yes responses for training sessions 2-5). One possibility for this is that parents felt more comfortable as time went on because of practice.

Treatment acceptability was then assessed through a Parent Satisfaction Survey which was completed at the end of the intervention phase. Results are presented in Appendix W. Fourteen out of the twenty parents (70%) in the training group completed and returned final evaluation forms. The form consisted of 19 questions requiring a Likert-response of Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree. Results are grouped into four main categories: (a) overall satisfaction with the training, (b) satisfaction with the procedural aspects of the training, (c) overall parent/child level of comfort with the training, and (d) satisfaction with the parent/child outcomes. In addition, parents were asked to comment on specific questions in greater detail.

Four questions relating to overall satisfaction with the training were presented in the survey. In general, parents reported high levels of satisfaction with the training. For instance, 100% of the parents indicated they either strongly agreed or agreed that they

found the training acceptable. However, within this category, a number of parents endorsed a neutral response when asked if the training was a positive experience for them and their child, (20%). A neutral response by two parents also was obtained for the question regarding recommending a similar training to other parents and for the question regarding the likelihood of continuing with training objectives after the conclusion of the study. No responses indicated disagreement or strong disagreement with any of the questions in the general satisfaction category.

Results were varied in the category pertaining to satisfaction with the procedural aspects of the training. Eight questions in this category produced information regarding satisfaction with the presentation of information, the role-play activities and scripts, and the home-activities. Parents endorsed higher ratings of dissatisfaction on items pertaining to satisfaction with role-play activities. For instance, three questions asked parents if they found the role-play activities useful in helping them understand how to implement teaching procedures and corrective procedures and how to complete the Home Activity Sheets. Although at least 70% of the parents indicated satisfaction with the use of role-play activities, a greater number of parents endorsed responses of neutral and disagree than on other survey items. Dissatisfaction with the role-play activities was clearly voiced by the parents in Group C, leading to the discontinuation of this procedure for the group, and, to a much lesser extent, was voiced by a minority of parents in the other groups. Although neutral responses were also endorsed for the use of scripts, the majority of parents were satisfied with this procedure, and no parent indicated a response of disagree. A number of parents indicated that the scripts were sufficient in helping them understand

and feel comfortable with their role, and suggested that role-play activities be eliminated in future trainings.

Questions pertaining to the time factor for completing Home Activity Sheets and the acceptability of home activity items revealed 100% satisfaction between the strongly agree and the agree response options. Similarly, parents reported satisfaction with the clarity of information presented.

Three of the questions on the Parent Satisfaction Survey Questionnaire elicited information regarding the parents' comfort in communication procedures of the training (e.g., asking questions during training sessions and telephone check-ins), and in implementing home activities. All of the parents indicated they felt comfortable with both the communication procedures and with their participation in the home-activities.

The overall category for satisfaction with parent/child outcomes elicited information regarding child outcomes in terms of phonological awareness and letter-identification, as well as parental understanding of concepts and child enjoyment of home-activities. All of the parents indicated an understanding of the concepts after the training. With the exception of one parent (neutral), the parents indicated that their children's skill-level in phonological awareness and letter-identification increased as a result of the training, and that their children enjoyed the activities.

Overall, the results of the evaluation forms and the Parent Satisfaction Survey indicate a high level of satisfaction with the procedural aspects and effects of the training. Based on the information, future training sessions will need to take into consideration more acceptable ways for parents to gain practice in implementing teaching and corrective

procedures, as the role-play procedures used in this study were viewed as unacceptable by a number of parents in both the evaluations and the Parent Satisfaction Survey.

## CHAPTER 5

### DISCUSSION

Research in the area of early literacy skill development has largely supported the effectiveness of instruction at the phonemic level (e.g., Adams, 1990; Gunn et al., 1997; Torgesen et al., 1994), and has shown that children who have literacy experiences that promote phonemic awareness are better prepared to begin formal reading instruction, and become good readers (e.g. Juel, 1988). Additionally, a growing research base has emerged supporting parent involvement in a child's education (e.g., Epstein, 1987). Although much of the research has focused on helping parents work with their children around behavioral issues (e.g., Fine, 1980 ), research also has focused on parental involvement in academic areas. Research studies that have focused on parental-involvement have shown positive gains for children (i.e., improved reading, increased confidence, positive experiences around reading, ) and positive reports from the participants (i.e., quality time between a child and parent). For pre-school children, parental involvement typically has been in the form of reading to children and creating a literacy-rich environment.

Despite the abundance of research in the areas of pre-literacy development and parent-involvement, a number of gaps and limitations are apparent in the existing research. One major gap is the lack of parental-involvement research in the area of pre-reading that has focused specifically on the key factors of phonological awareness and letter-identification. This study has attempted to address this gap by providing a training

program for parents of kindergarten children that focuses specifically on phonological awareness and letter-identification. This research also attempts to address the issue of treatment acceptability and integrity, important social validity issues that often have been ignored in intervention studies.

A number of limitations in the choice of dependent measures also are apparent in many intervention studies. Specifically, the majority of the studies examined in the literature review (Chapter 2) used a pretest/posttest model to examine changes between groups. This study has incorporated continuous measurement of the dependent variables, a seemingly more appropriate procedure for an intervention study involving ongoing instruction. The three measures used to examine growth in early literacy, Onset Fluency, Letter-Identification and Phoneme Segmentation, are all dynamic indicator measures, which, similar to Curriculum Based Measures, have shown to be valid and reliable measures of growth over time (Kaminski & Good, 1998). By using this type of measure, a large number of data can be collected throughout the course of the study, allowing for an examination of change over time, rather than change between two points (i.e. one point during baseline, and one point after treatment).

This discussion section examines the results as they pertain to the following questions. First, does training parents to work with their children in the areas of phonological awareness and letter-identification skills influence early literacy skill development? Second, can parents be trained to accurately implement specific training procedures? Third, were the parents satisfied with the training they received? These

questions will be addressed, followed by implications for practice, limitations of the study and directions for future research.

### Does Training Parents To Work With Their Children Influence Early Literacy Skill Development?

Three measures of the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) were used to answer this question at both the group and individual level.

#### Group Outcomes

At the group level, rate of progress (slope) data and level data (the median of the last three scores during baseline and intervention) were analyzed to determine differences between groups. For the three measures of Onset Fluency, Letter-Naming Fluency and Phoneme Segmentation, significant differences for slope data were found favoring the treatment group relative to the control group. Additionally, when the median of the last three data points during baseline and intervention for each measure were used to analyze level differences, significant differences in favor of the treatment group also were found. For the slope analysis, the effect size for both Onset Fluency and Phoneme Segmentation were medium, and the effect size for Letter-Naming Fluency was small. The medium gains seen in Onset Fluency and Phoneme Segmentation, indicate that it is possible, as much of the research contends, to teach children phonemic awareness skills via parent delivered instruction. The overall results indicate, that for this study, training parents to

work with their children in the areas of phonemic awareness development and letter-identification, does positively impact early literacy skill development.

### Individual Outcomes

A t-test analysis was used to determine the extent of growth between the baseline and treatment phase for each individual child. Positive growth was apparent for about 50% of children in both groups on the Letter-Naming Fluency measure, although only one child in the control group experienced statistically significant growth, as compared with four children in the treatment group. For Letter-Naming Fluency, a number of children in both groups showed decreases in slope from baseline to treatment. However, the decrease was generally less than one point, indicating that certain children's scores remained consistent throughout the study, with a very marginal decrease. For many children this was true because their Letter-Naming Fluency scores were already at a ceiling level.

Likewise, for Onset Fluency, a number of children in the control group had larger slopes during baseline than treatment, whereas only a small number in the treatment group experienced this tendency. Although children in both groups experienced gains in the ability to correctly identify onset phonemes, children in the treatment group appeared to identify the onsets more rapidly and with more fluency, which increased their overall score for this measure. It also was observed that even when children in the control group were able to point to a picture that began with the target sound, they were often unable to produce the first sound for a target word. Many of the children often supplied the letter name instead. Children in the treatment group had practice with this particular task at

home, and in addition, in one of the onset fluency activities, were told to provide the sound, and not the letter, as part of the corrective procedure from the parent. Thus, it is likely that children in the treatment group made more gains in both Letter-Naming Fluency and Onset Fluency as a result of speed and fluency, two skills that they acquired as a direct result of the practice they were getting at home.

For Phoneme Segmentation, the majority of children in the control group achieved positive or no growth between phases, with less children experiencing the negative growth seen in the other two measures. Despite positive growth for this measure, no child in the control group experienced statistically significant growth, as compared to children in the treatment group, eleven of whom experienced significant growth. The changes in scores for children in the treatment group for this measure most closely corresponded with the introduction of phonemes in the training. Phoneme splitting and blending, the skill most closely related to the Phoneme Segmentation task was introduced during the fifth week of the treatment phase. Visual analysis of the data indicates that the most gains were made in this area after the sixth week. Some of the children's scores remained low after weeks five and six, and showed either steady increase or rapid increase from week seven on. This indicates that the children were developmentally ready to learn this skill, and with appropriate instruction and practice, were able to successfully learn this skill. Initially, it was not assumed that results could be pinpointed to any one aspect of the study, but rather that changes would be seen over time; however, the changes in the phonemic awareness tasks clearly corresponded to the introduction of

this task during the training. The importance of this result as it relates to early literacy education will be discussed in the section Implications for Educators.

### Can Parents Be Trained To Accurately Implement Specific Training Procedures?

This question sheds light on the issue of treatment integrity. The results indicate that parents can be trained to accurately implement specific training procedures in the area of early literacy. Information from the training evaluations and the Home Activity Sheets, indicated that the parents felt comfortable with the implementation of training objectives. For instance, on evaluations for each training session, the majority of parents (between 90 and 100%) indicated that after each training session, they felt comfortable in their role in both presenting teaching procedures and Home Activity Sheets to their children. On self-monitoring scales for each teaching procedure, the majority of parents indicated that they implemented the teaching procedures in the same way they had implemented them during role-plays with scripts during training sessions. Additionally, the majority of parents indicated that they were comfortable with their presentation of teaching procedures to their children. For corrective procedures, a high percentage of parents, once again, indicated that they had presented corrective procedures for incorrect responses in the same way they had practiced them during scripted role-play sessions, and that for the most part they felt comfortable with their presentation.

Parent responses indicated that as the training progressed, the number of self-corrected responses increased, indicating a decrease in the need for the corrective procedure. Parents suggested that this occurred when the child understood the concept,

and was able to self-monitor her or his own mistakes. Parents also commented that a self-correction was sometimes elicited as the parent was about to begin the corrective procedure, indicating a prompt to the child that her or his response was incorrect. Likewise, a number of parents indicated they were uncomfortable with the lengthy wording of corrective procedures in the scripts. They indicated that at times they modified the scripts so that the corrective procedures were shorter and so that the dialogue sounded more natural and familiar to the child. Many of the parents suggested that the scripts be shortened in future trainings.

In contrast, a number of parents commented that the scripts were useful because they provided a set corrective procedure, and allowed the parent to focus on the activity items rather than on devising appropriate ways to correct a mistake. A number of parents also commented that the scripts were helpful because the wording was encouraging rather than judgmental, and lessened potential frustration for both the parent and the child.

### Were the Parents Satisfied With the Training They Received?

This question addresses treatment acceptability. Evaluations for each training session, and an overall evaluation at the end of the study indicated that parents were satisfied with the procedural aspects and effects of the training. All of the parents indicated that overall, they were satisfied with the training they received, and that they felt the activities on the Home Activity Sheets, and the time it took to complete them were acceptable. The majority of the parents also reported that the training was a positive experience for them and their child, and that they would recommend a similar training to

other parents of kindergarten children. Parents suggested that the training occur earlier in the school year, with more emphasis in the area of phonemic splitting and blending. The majority of the parents reported that they were planning to continue to use similar activities at home with their children during story-book reading. Unfortunately, this study did not include a follow-up phase to test the reality of parents' reports in this area.

Satisfaction with the role-play procedures were mixed. Some parents reported that they found the role-plays unhelpful and that the script sufficed. One parent suggested that rather than role-play, the trainer observe the parent and child in a real situation and provide feed-back based on the observation. Another parent suggested that the role-plays consist of scenarios in which the child makes certain mistakes, or asks specific questions that the parent can answer and then receive feed-back from the trainer. These suggestions will be helpful in planning future training sessions. Other parents felt that the role-plays were useful, albeit somewhat awkward. For instance, one parent wrote "I feel that even though the role-plays were somewhat awkward, they were helpful, especially with regards to the corrective procedures."

A number of comments from the parents indicated overall satisfaction with the training because of new knowledge regarding phonemic awareness, and an intention to continue with similar activities. For instance, one parent wrote "my child and I really enjoyed doing the work. It helped us both. I will continue to keep the worksheets and use them for future practice." Another parent wrote, "the training has taught me so much that I feel more effective when reading to J. because we can enjoy a story together and do

activities easily that will help her become a better reader. It has made me think of reading in a whole new way.”

### How Do These Results Compare With Other Research In the Area of Early Literacy and Parent Training?

This study shared similarities with other research in the areas of parent training and early literacy and literacy achievement. In the area of early literacy in general and phonemic awareness in particular, this study supported the view that phonemic awareness is a teachable skill, and that it can be learned through explicit instruction and practice (e.g., Adams, 1990; Gunn et.al., 1997; Smith et. al., 1997). Much of the research has supported phonemic awareness as a central component to pre-literacy instruction at the school level, and has shown that children who receive phonemic awareness instruction, perform better on early literacy and literacy achievement measures (e.g., Torgessen et al., 1994). This study showed that when parents taught and practiced specific phonemic awareness skills to their children, significant gains on early literacy measures (DIBELS) were noted. Other studies that have followed children’s reading achievement have shown that early literacy instruction in specific skill areas supports higher reading achievement scores as children progress through the elementary school grades (e.g., Lyon, 1997). This type of follow-up deserves attention in future research.

Additional early literacy research supports a preventative approach by showing that remediation for reading problems often is unsuccessful, given that children who present

with reading difficulties in the early grades, are likely to continue experiencing reading difficulties, even with specific remediation programs in place (e.g., Juel, 1988).

The individual results of this study (and the case studies presented in Appendix Q) help explain why a preventative approach is important in identifying children with potential problems early on. For instance, although some children in the control group did make improvement in their phonemic awareness skills, certain children made no gains, indicating that the instruction they were receiving in their classrooms was not sufficient. These children potentially could benefit from what Cunningham (1990) refers to as explicit training in phonemic awareness, as well as frequent progress monitoring, as supported by Kaminski & Good (1996).

Although the review of the parent training in chapter two did not reveal any studies that focused on phonological awareness skills per se, a number of results across parent involvement studies are noted. For instance, in many of the literacy studies involving parent participation with older children, parents indicated that benefits of the program included increased time with children, and heightened confidence in their ability to work with their children in academic areas (e.g., Ellis, 1992). Parents in this study also found the time spent with their children rewarding, and commented that actively participating in their children's education was important to them and satisfying.

One of the limitations that was frequently noted in the literature review was lack of treatment integrity and acceptability. Studies that did measure this variable (e.g., Fry, 1985; Taverne and Sheridan, 1995), have shown that parents were typically satisfied with the training provided to them, and felt comfortable with their role in teaching or coaching

their children. Likewise, in this study, parents, generally reported comfort in their role in providing phonologically-based instruction to their children, and were satisfied with the training. In addition, they reported they would recommend the training to other parents of kindergarten children.

### Implications For Educators

A number of implications for practice were revealed in this study. One major implication is that phonemic awareness and letter-identification can be taught to children through parent delivered instruction and practice. This is consistent with other research showing that in educational settings, phonemic awareness is a teachable skill (Bryant et al., 1990). In this study, results were achieved in a relatively short time, and the teachers were the parents. This is encouraging because phonemic awareness has been hailed as a strong predictor of early reading success. The fact that it is both a teachable and a crucial skill, should warrant its inclusion into both school-based and home-based programs. At least for this study, the skills were both time and cost efficient to teach, indicating that it is possible to include parents in home-based activities that are affordable and take an acceptable amount of time to administer.

Another implication for practice involves the parents. Despite the fact that certain educators question the value of parent involvement, this study reveals that parents are both willing and able to work with their children at home. Other studies have indicated a similar willingness of parents to work with their children on educational activities (i.e. Hannon, 1987; Taverne & Sheridan, 1995). Many of the studies on parent-involvement

indicate that this type of parent-child interactions not only impact educational achievement, but have additional advantages of creating positive learning time between a parent and child. This study indicated similar results.

A third implication for practice involves the use of the DIBELS as an appropriate way for educators to monitor children's progress toward early literacy skill development. For instance, although all of the children in the treatment group made gains, a couple of children only made small gains. By using the DIBELS to monitor growth, an educator would be in a better position to modify instruction for the children making insignificant gains, by using the benchmarks established by Good (1999) as a guide for determining acceptable change. Although phonemic awareness is an accessible skill for most kindergarten children, a small percentage of children will need more explicit instruction in this area to reach the benchmark of 35-45 phonemes per minute by the beginning of first grade.

Reporting scores on each of the measures is also a useful way to present information to parents, and can be used with children as a way for them to view their improvement in a given area. Teaching educators and parents how to read visually presented data via a graph is an easy task that can result in their understanding of the growth process, as well as the utility of using a repeated measurement strategy to gauge growth.

In sum, the implications in involving parents in the pre-reading skill development of their children are positive. Curricula can be modified to involve parents in a time and cost-efficient manner that produces positive achievement results for the children. For instance, once parents are taught the basic teaching procedures, they can potentially

generalize the activities to incorporate current classroom materials and books. In addition, educators can monitor their students' growth through a repeated measure and ultimately include parents in the modification of instruction.

#### Limitations of the Study:

Despite the positive results of this study, a number of limitations warrant caution in interpreting the results. One limitation involves the effect of motivation both at the parent and child levels. The children in the treatment group were practicing activities that were similar to the test activities with their parents, and presumably being positively reinforced for their hard work, as well as intrinsically reinforced for improvement. In addition, the children in this group were more familiar with the examiner since the parents talked about her in connection with the home-activities, and some of the children received childcare at the school while their parents attended the training sessions. Thus, children in the treatment group might have been more motivated to perform well on the early literacy measures. This limitation was somewhat accounted for by the fact that the children in the control group also were familiar with the examiner, since they too worked with her for the same amount of time as children in the treatment group, and were reinforced for their efforts.

Parents in the treatment group were clearly motivated to work with their children, and expressed delight as they saw signs of improvement in their children's early literacy skill development. The issue of motivation in regards to time is important because the study did demand that parents not only meet with the trainer one hour a week for five weeks,

but also that they set aside twenty minutes four times a week for ten weeks. This is a significant amount of time. This limitation was somewhat accounted for by the fact that parents were randomly assigned to groups. Thus, the parents in the control group were had expressed interest in participating in the study, and were aware of the time-commitment. Therefore, it cannot be assumed that the parents in the treatment group were more motivated than parents in the control group to work with their children at home.

Other limitations that effect the confidence of results involve issues of internal validity. Maturation is one such issue. The study lasted 13 weeks, taking place towards the end of the kindergarten school year. It is therefore possible that some growth would be expected within both groups as a result of developmental readiness, schooling and literacy experience. Although children in the control group did make gains, the gains were far greater for children in the treatment group, indicating that the training did impact the test scores. Additionally, the random assignment of children into the two groups across classrooms and schools, accounts for this limitation.

Although treatment integrity was monitored in this study, potential problems in this area need to be highlighted. Parents self-monitored the accuracy and consistency of presenting materials and corrective procedures in the way they practiced them during training sessions. As a result, it is possible that parents inaccurately self-monitored by stating that procedures were presented in the same way as role-plays when they actually were not. This could have occurred because parents incorrectly thought they were presenting information correctly, or because they reported correct implementation

because they wanted to please the trainer. It seems likely that parents did deviate from the procedures in regards to the corrective procedures, based on parents' comments indicating that they found the scripts wordy and lengthy. This limitation was not controlled for in a systematic fashion. Observing the parents with the children would have accounted for this limitation, and would be a nice addition in the area of treatment integrity for future studies.

In a similar vein, a potential flaw regards role-play activities. Parents in Group C decided to discontinue with the role-plays after the second training session. Thus, it is possible that they deviated from the training objectives in terms of presentation of material and corrective procedures. The trainer attempted to account for this by asking the parents to read the provided script and ask questions in lieu of the role-play activities. Nonetheless, parents from this group received less practice and feedback than parents in the other groups. Weekly telephone contact with the parents presumably controlled for this because parents were given the opportunity to practice at home with their children and then ask questions or receive feed-back from the trainer.

External validity limitations also are apparent in examining this overall project. One such limitation is the lack of a follow-up phase in the study. Although parents reported they intended to continue practicing activities with their children, the extent of continued practice is not being followed. It is also unclear whether the changes observed will continue throughout the summer, or, if they will decrease as a result of time. A follow-up study to determine if results are long-standing would be a helpful addition for this type of

study, since ideally gains in achievement should be maintained after the intervention phase is complete.

Another limitation involves generalizability. While effects were seen for this particular study, it is impossible to draw conclusions about the effectiveness of a parent-training with other populations. For instance, this population was not diverse in terms of ethnicity or marital status. Thus, it would be impossible to conclude, for instance, that the results would be similar if the training was attended by single-parents only or a more diverse group of parents. This particular limitation is difficult to avoid since the study demands that participation be voluntary.

### Future Research

This study indicated parent-involvement in early literacy skill development is viable in terms of student achievement and parent satisfaction. The students in the study were completing the end of their kindergarten year. Future research might want to examine a similar training for parents of younger children to determine when it is appropriate to begin working with children in this area. For instance, it is likely that many children would not have benefited from the phonemic aspect of the training had it occurred earlier in the year. This training incorporated the skills outlined in Marilyn Adams' (1990) hierarchy of phonemic awareness, beginning with rhyming. Rhyming is a skill that children as young as 3 are able to grasp. Thus, future research might also examine at what age the skills leading up to phonemic awareness (i.e. rhyming), could be successfully introduced to children by their parents during home-based activities.

Another area that deserves future attention involves fine-tuning the training in the areas of role-playing activities and scripts. For instance, is it possible for a training to have similar results without role-plays, or with less detailed scripts? This is an important question to ask because although the majority of parents in this study were willing to continue with role-playing activities, many parents might not have this type of perseverance. Future studies might examine how treatment integrity and acceptability can be maintained in a way that is acceptable to the parents in respect to time and procedure.

Another area for future research might examine the role of parents as both educators and data collectors. For instance, the three measures from the DIBELS used in this study are possible for parents to administer with a short training. Involving parents in the administration process might add an additional motivation component, as parents would have an opportunity to observe changes in their children's performance on a weekly basis. The visual representation of growth might also appeal to parents and children.

## Conclusions

This study contributes additional information regarding the effects of parent-delivered instruction to the existing literature on early literature skill development. Specifically, the study showed that it is possible for parents to teach their children important early literacy skills such as phonological awareness development and letter-identification skills. In addition to significant growth in early literacy areas, parents reported high satisfaction ratings regarding the training and the implementation of training objectives. The joining

of two important areas in educational research, parental involvement, and phonological awareness instruction for pre-readers appears to be both feasible and needed. Future work ideally will continue to focus on the merging of these areas, and will utilize enthusiastic parents in the involvement of pre-reading education with their young children.

## APPENDIX A

### SUMMARY OF ADAMS' HIERARCHY OF PHONEMIC AWARENESS TASKS FROM EASIEST TO MOST DIFFICULT: \*\*

<b>TASK:</b>	<b>DESCRIPTION:</b>
1. Rhyming	The ability to hear similar sounds in words
2. Oddity Tasks	The ability to compare and contrast the sounds of words for rhyme or alliteration; this requires sensitivity to similarities and differences in the overall sounds of words as well as the ability to focus attention on the components of sounds that account for similarities and differences. For example, the ability to recognize that cat is the odd word in the string "cat," "ball," "bike," and "book."
3. Blending and Syllable-Splitting	The ability to understand that words can be subdivided into sounds corresponding to phonemes, and the ability to hear the way phonemes sound when produced in isolation; a more difficult task requires the child to produce the sounds in isolation. For example, the ability to blend segments of a word together to form the word. (\c\ \a\ \t\ forms the word "cat.")
4. Phonemic Segmentation	The ability to break a syllable or word into its component phonemes. For example, the ability to decompose the word "map" into the sounds of \m\ \a\ \p\.
5. Phoneme Manipulation	The ability of a child to pronounce a word after she/he has removed its first, middle or final phoneme. For example, the ability to say "cat" without the \c\; found to be too difficult for most children before the end of first grade.

\*\* Adapted from Marilyn Adams' (1990) summary of phonemic awareness

## APPENDIX B

### GUIDELINES FOR LITERATURE REVIEW CRITERIA-DEFINITIONS FOR CHARTS

#### Chart One

##### Type Of Curriculum Used

1. Published—a curriculum that can be purchased by the public.
2. Unpublished  
developed by researcher---specific objectives are created by the researcher for the study.  
developed by other—a curriculum that is not published, and that has been created by someone other than the researcher for the study.
3. Data to support it? Does the article provide data that supports the effectiveness of the curriculum?

##### How Was Curriculum Delivered?

1. Written: Is written material outlining objectives available for distribution to parents?
2. Verbal: Is information verbally given to the parents by the researcher?
3. Combination

##### Training Objectives Specified Or Identified?

1. Are specific objectives of the training identified (i.e. a specific activity such as a song that teaches a specific skill).
  - A Yes\* indicates that the objectives are vague (e.g., “Explained how to engage in book-reading activities.”)
  - A Yes indicates that the objectives are more specific (e.g., “Explained how to introduce a book by reading the title and the author to the child.”)

##### Number Of Meetings And Time For Each Meeting

1. How often did the parents meet for a training, and how long did each training last.

##### How Was Parental Mastery Evaluated?

1. What tools/activities were used to evaluate parental mastery of material. For instance, did parents participate in role-plays and receive corrective feed-back from the researcher? Etc.

##### Was Mastery Attained?

1. Did the parents achieve mastery, as evaluated by the researchers?
  - A Yes\* indicates that attainment of mastery was implied (e.g., that practice with feed-back occurred until mastery was attained.)

- A Yes indicates that the attainment of mastery was explicitly stated in the article (e.g., an explicit statement that parents mastered the skills).

#### Did The Researchers Teach The Objectives?

1. Did the researchers teach the parents what they had intended to teach, based on their specific training objectives?
  - A Yes\* indicates that the article implies that the researchers taught the objectives.
  - A Yes indicates that the article explicitly notes that the researchers taught the objectives.

### Chart Two

#### Treatment Integrity Checks:

1. Treatment integrity refers to the degree to which a plan is implemented as planned. In order to determine if parents are teaching their children the training objectives correctly, the researcher needs to implement checks. These can be in the form of phone calls, parent logs, observations, etc.

#### Integrity Attained?

1. Based on the checks, did the parents implement the training objectives as planned?
  - A Yes\* indicates that the article implies that parents correctly implemented the training objectives (e.g., it is assumed that if there were treatment integrity checks that the checks continued until mastery was attained).
  - A Yes indicates that the article explicitly notes integrity attainment.

#### Did Parents Teach Children The Objectives?

1. Based on integrity checks and attainment of integrity.
  - A Yes\* indicates that the article implies that the parents taught the children the objectives.
  - A Yes indicates that the article explicitly noted that parents taught the children the objectives.

### Chart Three

#### Outcome Effects Measured By: Group, Individual, Both:

1. What type of study was implemented? For instance, were outcome measures based on differences within individual children, groups of children or both?

#### Types Of Outcome Measures: CBM, Published Test, Other:

1. Were measurement tools curriculum based measures, published tests, teacher report, etc.?

#### Time-Frame Of Measurement:

1. Did measurement occur in a pre-test/post-test framework? Was a follow-up phase included?

#### Was Treatment Effective?

1. Statistical Significance: Was there a statistical significant difference between measurement scores?
2. Clinical Significance: No statistical significant differences, but teacher or other professional noticed improvement or change.
3. Social Significance: Improvement or change noticed by a non-professional, (e.g., parent).

#### Are Elements Of Effectiveness Identified?

1. Can effective change be linked to a specific, identified segment or objective of the training? For instance, did a specific phonological-based activity contribute to change?

#### Did The Training Produce Positive Outcomes For The Children?

1. Did the children improve in a specific area based on the training and the parents' implementation of specific skills?

## APPENDIX C

### SUBJECT RECRUITMENT FLYER

March 3, 1999

Dear Parent(s):

We are participating in a research project to examine the effectiveness of a training program for parents of kindergarten children. We will do this by providing training sessions for parents that will teach parents how to incorporate specific activities into literacy interactions at home, and by monitoring children's progress in early literacy skill development over time. We would like to invite you to participate in this project. You have been sent this letter because you are a parent of a kindergarten child.

If you decide to participate, your child will be assigned to one of two groups. If your child is assigned to the first group, you will be asked to participate in a series of five training sessions lasting approximately one hour each, and to participate in specific activities with your child at home four nights a week for 20 minutes each for 10 weeks. During the training sessions you will learn about different activities that you can do with your child while reading storybooks to your child. Aside from participating in training sessions, and working with your child, you will be asked to complete a questionnaire before the trainings, an evaluation form at the end of each training session, an evaluation form at the end of the project, three home-based activity sheets per week, and in addition, check in with the researcher by phone once a week for the duration of the study. In addition, you will be asked to allow a research staff person to collect information regarding your child's early literacy skill development. The collection of information will occur at your child's school once a week, and should take between five and ten minutes.

If your child is assigned to the second group, you will be asked to allow a research staff person to collect information regarding your child's early literacy skill development as described above. At the end of the study, we will offer you the opportunity to participate in a modified version of the training.

The potential benefits of participation in this study for parents include: a) the opportunity to learn about important early literacy skills, b) the opportunity to become more involved in your child's education, c) the opportunity to engage in literacy interactions with your child.

The potential benefits to children include a) the opportunity to receive home-based parental assistance in early reading skill development, b) the opportunity to engage in positive literacy activities with parents and c) increased interactions with parents.

The possibility of risk are minimal and primarily consist of issues of confidentiality. However, all information we collect on you and your child will be coded by number, not name. In addition, the list of names will be locked in a file cabinet. Any information regarding your child, will be referred to only by the code number assigned to you and your child.

All children will receive a gift certificate to Friendly's ice cream. Parents will also receive a children's book. The gift certificates will be distributed at the end of the study.

If you have any questions, please contact Rebecca Dowling or Gary Stoner, Ph.D., at the following address or phone:

School Psychology Program-Hills South  
University of Massachusetts-School of Education  
Amherst, MA 01003  
545-1527 (Dr. Gary Stoner, Associate Professor, Project Advisor)  
545-4602 (Rebecca Dowling, Principal Investigator)

Please complete the form below and return it to your child's teacher by March , so we may have an idea of how many parents are interested in learning more about the project and possibly participating. Please note that returning this form does not constitute an obligation to participate or consent for participation, nor does it indicate that you will be selected for this study.

Sincerely,

Rebecca Dowling  
Principal Investigator

Gary Stoner, Ph.D  
Associate Professor

I am interested in learning more about the project and potentially participating.

Check one: ☐ Yes ☐ No If yes, please complete the following:

Your name(s): \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Child's name: \_\_\_\_\_ Teacher's Name: \_\_\_\_\_

School Name: \_\_\_\_\_

Please indicate what days and times would be best for you to participate in training sessions, once a week for one hour each, for five consecutive weeks: (check all that apply):

DAY

Monday \_\_\_\_\_ Tuesday \_\_\_\_\_ Wednesday \_\_\_\_\_ Thursday \_\_\_\_\_  
Friday \_\_\_\_\_ Saturday \_\_\_\_\_ Sunday \_\_\_\_\_

TIME

For weekdays, please list the times after 3:00 PM, that would be best for you to meet for one hour:

\_\_\_\_\_

For Weekends, please list the times that would be best for you to meet for one hour:

\_\_\_\_\_

Will you need childcare? \_\_\_\_\_ Yes \_\_\_\_\_ No

## APPENDIX D

### INFORMED CONSENT FORM

#### Informed Consent for Parent and Child Participation

You are being asked to participate in a research project with your child as part of a dissertation study by Rebecca Dowling at the University of Massachusetts at Amherst. The purpose of this study is to evaluate a training program that will teach parents how to participate more effectively in literacy activities with their children. Information from this study will be used to improve ways that parents can help their children learn early reading skills.

#### **What the Study Involves**

If you decide to participate in the study and give consent for your child to participate, we will teach you different ways to help your child learn early literacy skills. These may include: a) helping your child learn to identify new letters of the alphabet, b) helping your child learn the different sounds different letters make, and c) helping you and your child establish different activities at home that involve literacy activities. These activities can provide opportunities for your child to engage in interactions with print.

Instruction will be provided to you and other parents who have also agreed to participate in the study at a convenient time and place in your neighborhood. Child-care will be provided. In small groups, each parent will participate in five training sessions, lasting about an hour each. During the sessions, you will learn different activities, and have an opportunity to practice these activities until you feel comfortable with them. In addition, your child will be tested at her/his school in the area of early literacy skills development throughout the study.

Your involvement in the study will last about 10 weeks, and will consist of the following:

1. Five training sessions lasting approximately one hour each.
2. You will be instructed in several ways of helping your child during literacy activities. Training sessions will occur once a week for five weeks.
3. After you have learned different activities that you can use during literacy activities with your child, you will be asked to participate in literacy activities 4 times a week for 20 minutes each. After each session, you will be asked to complete an evaluation of the training session. You will also be asked to complete paper-work pertaining to the activities you did at home with your child for the week.

4. At the conclusion of the study, you will be asked to complete a questionnaire to evaluate the training provided to you.

### **Explanation of Risks and Benefits**

During the training, you might feel uncomfortable as you learn different ways to engage in literacy activities with your children. For instance, you might worry that you are not properly participating in an activity that was taught during the training. In addition, you or your child might feel uncomfortable as you use the new skills learned at the training, and as you change your schedule to incorporate the new activities.

We will protect you and your child from these risks in the following ways. If you experience discomfort at any time throughout the study, you are encouraged to discuss this with the researcher. In fact, throughout the study, the researcher will provide you with opportunities to ask questions about any activity you are experiencing difficulty with. Throughout the study, the main researcher will be available to answer any questions you may have about your participation in the study.

In addition, you may choose to end a training session or any activity in the training session, or to end any activity you participate in at home. All of your participation in this project is voluntary. At any time, you or your child may stop participating in the project by telling the researcher that you would like to stop. This holds true for a particular training section, or the entire project.

All of the information regarding you and your child will be kept in a secure and private place, and will not be shown to anyone outside of the researcher and her immediate colleagues. All of the research staff are aware of the importance of confidentiality. Once information has been collected, we will remove all of the names and other identifying information, and replace this information with codes that will protect your and your child's identity.

For your participation in the study, you will also receive a children's book and a Friendly's gift-certificate. You will receive the book at the beginning of the study and the gift certificate at the end of the study.

If you have any questions about the project at any time, please call Rebecca Dowling , M.Ed. at 413-549-2616, or Gary Stoner, Ph.D., at 413-545-1527.

Your signature below indicates that you:

- 1) have read and understand the information provided above,
- 2) willingly agree to participate

- 3) give your permission for your child \_\_\_\_\_ to participate.
- 4) may withdraw from the study at any time, and
- 5) have received a copy of this consent form.

\_\_\_\_\_  
Signature of Parent

\_\_\_\_\_  
Date

APPENDIX E

PARENT QUESTIONNAIRE

**Family Information**

Name of person completing form:  
\_\_\_\_\_

Relationship to focus child: \_\_\_\_\_

Address: \_\_\_\_\_

Tel: H \_\_\_\_\_ W \_\_\_\_\_

Please list the other people/family members living in your house, including all children and extended family. Include name, relationship, age, gender, occupation, and completed level of education:

Name	Relationship	Age	Gender	Occupation	Level of education

Marital Status: \_\_\_\_\_

Total family income:

Under 10,000\_\_\_\_\_ 10,000-20,000\_\_\_\_\_ 21,000-30,000 \_\_\_\_\_

31,000-40,000\_\_\_\_\_ 41,000-50,000\_\_\_\_\_ 51,000-60,000 \_\_\_\_\_ Over 60,000\_\_\_\_\_

Ethnicity: (circle)

- White/Caucasian/European
- African American/Black/Caribbean American
- Asian American/Asian/Pacific Islander
- Hispanic/Latino
- Native American/American Indian
- Biracial/multiracial: Please specify: \_\_\_\_\_
- Other: Please specify: \_\_\_\_\_

Have you or any member of your immediate family been diagnosed with reading disabilities or experienced reading problems as a child or adult?

If yes, please describe:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Primary languages spoken in home: \_\_\_\_\_

**Focus Child Information**

Name of focus child: \_\_\_\_\_

Age of child: \_\_\_\_\_

Date of birth: \_\_\_\_\_

Gender (M or F)

Day Care/Preschool history:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Child’s first language: \_\_\_\_\_

Has the child been identified as having any medical, developmental, learning or psychiatric disabilities? Please describe:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Please describe the development of language acquisition for the focus child:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Did the focus child experience any language articulation difficulties? If yes, please describe:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Reading Habits**

Do you or don't you like to read? \_\_\_\_\_

What kinds of material do you most enjoy/least enjoy?

\_\_\_\_\_

\_\_\_\_\_

Do you read often, occasionally, rarely, hardly ever? (circle)

How often does your child see you reading? \_\_\_\_\_

For the following materials, please answer a) if you have them in your home, and b) how often you read them using the following rating scale:

- 1 = at least one time per day
- 2 = at least one time per week
- 3 = at least one time per month
- 4 = less often than one time per month

**In your home?**

Yes	No		If yes, how often do you read			
_____	_____	daily newspaper	1	2	3	4
_____	_____	weekly/monthly magazines	1	2	3	4
_____	_____	novels	1	2	3	4
_____	_____	non-fiction	1	2	3	4

_____	_____	school-related material	1	2	3	4
_____	_____	work-related material	1	2	3	4
_____	_____	children's books	1	2	3	4
_____	_____	children's magazines	1	2	3	4
_____	_____	religious material	1	2	3	4

On average, how much time do you spend reading each day?

Weekdays	0 min.	1-15 min.	15-30 min.	30-60 min.	60 min. +
Weekends	0 min.	1-15 min.	15-30 min.	30-60 min.	60 min. +

On average, how much time do you spend reading to the focus child each day?

0 min.	1-5 min.	5-10 min.	10-20 min.	20-30 min.	30 min. +
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## APPENDIX F

### SAMPLE SCRIPT: TRAINING SESSION ONE

#### Training Session Number One: Rhyming

##### Introduction and Logistics

Welcome, my name is Rebecca. I believe I have spoken with all of you on the phone. Thank you for agreeing to participate in the study. We will meet for about one hour for the next five weeks. The overall objective for the training sessions is to teach you a number of early literacy skills that you can then teach to your children. During each session, I will introduce a new skill to you and distribute teaching materials and three home-activities sheets for you to use during the week. After I discuss the skill, we will discuss ways to introduce the skill to your child. Everything is scripted, and during role-plays today you will have an opportunity to practice and ask questions. You will also have an opportunity to practice with a Home Activity Sheet.

Before we begin, let's go around the room and introduce ourselves, the school your child attends, and the name of your child.

Today we are going to discuss the idea of parents as teachers, reinforcement and corrective procedures, an overview of the skill areas, and then focus on the first skill area of rhyming. Then, we will split into groups of two and one person will act as the parent and the other as the child for practice. I will also discuss some of the logistics for the upcoming week.

## Parents As First Teachers

As you know, parents are a child's first teacher. Parents are constantly teaching their children in the areas of daily living skills, language and literacy. For instance, in the area of daily living skills, parents teach children how to dress, brush their teeth, clean up, share a toy, act safely, etc.

In the area of language development, children learn to speak by listening to adults speak and modeling that behavior. One way we teach children how to speak is by repeating something a child has said. For instance, a child might say, "I seen Jen in the park today." As a way to model the correct sentence, a parent might respond, "wow, you saw Jen at the park today?" Parents also teach their children new vocabulary by talking about events, household items, etc.

Finally, children learn a lot about literacy from parents. Parents model reading behaviors, parents and children read together, which teaches a child that books go from front to back, that pictures go with words, new vocabulary, etc.

What I'm asking you to do with your child is to incorporate the learning of different early literacy skills into book-reading. During the first night, I'll have you read a story to your child. I have *A Treasury of Children's Literature* for you. During the second night, I will ask you to explain a specific skill to your area and complete a short home-activity sheet. During the third and fourth nights, you will complete more home activity sheets that are related to the week's story.

## Reinforcement Procedures and Corrective Procedures

Before we discuss the skills aspect, I'd like to discuss reinforcement procedures and corrective procedures. I'm sure you already do a lot of reinforcing at home. I want to remind you to praise your child both for working hard and for correctly answering questions. Different ways you can praise your child are to:

(Go over reinforcement procedures sheet).

There are a number of corrective procedures for each activity. But, there are a number of things I'd like to mention here. One is how to work with your child during times of frustration. Obviously, if an activity is causing your child to become overly frustrated, the activity should be terminated. Remind your child that she or he is doing good work and that you appreciate her or his effort.

(Go over Corrective Procedure Hand-Out)

## Overview of Skill Areas

The skills that we are going to discuss all are related to phonological awareness and letter-identification. I've chosen to emphasize these skills because these skills are pre-cursors for beginning reading.

Before we begin, I want to go over some definitions.

The first is a phoneme. A phoneme is the smallest unit of sound in a word. So, for instance, the word cat is made up of three discrete phonemes that when put together forms the word. They are /k/ /a/ /t/. The phoneme is not the letter itself, but the sound a letter or a group of letters make within a word. Most phonemes represent individual letters, but some can be represented by clusters of letters, like /st/ in stool, or /cl/ in clap.

Changing the phoneme in a word will change the word. If we take the word ‘cat’ and change the first phoneme or sound to /fl/, the entire word changes and becomes ‘flat.’ A child who is aware that words can be broken down into parts, syllables or phonemes and is aware that phonemes can be manipulated to form different words has a phonological awareness, a sensitivity to the individual sounds in words. The English language has approximately 40 phonemes...25 consonants, and 15 vowels.

As a child gets older, she/he is able to play with phonemes in words at more advanced levels. But there are a number of tasks that we can do with very young children to prepare them to work with phonemes. We can start with activities with words, syllables, and later, phonemes.

### Rhyming

This week, we are going to discuss rhyming, which deals with sound differences at a word level. Most kindergarten children have already had a lot of experience with rhyming words. I chose to spend the first week on this activity because I want you and your child to get an opportunity to work together on something somewhat familiar during the first week. I also chose rhyming because rhyming tasks are considered the first task in preparation for later phoneme manipulation in words.

With rhyming tasks, you will be asking your child if one word rhymes with another, or to identify which word doesn’t rhyme in a string of words, for instance, ‘cat’ ‘bat’ ‘car’ ‘fat.’

As I mentioned before, I’ve prepared a script that you can use to introduce your child to this activity. One reason for the script is to maintain consistency, so that each

child is being taught in the same way. This is important for my study. The second reason is that I know that these activities are already demanding of you and your child's time, and I didn't want you to have to think about ways of introducing a skill to your child. I'm sorry if at times you will feel like a recording as you read the script, but I hope that you will follow it.

Let's go over the rhyming procedures. This is what you will do at the beginning of the second night.

(Go over teaching procedure sheet).

### Home Activity Sheets

Now, I'd like you to look at the Home Activity Sheets. Each activity sheet has three or four separate activities. I'd like to go over each activity, and then discuss the corrective procedures for each activity. After, we'll break into groups of two and I will have you practice the teaching and the activity sheets. I want you to pay particular attention to corrective procedures. If you are the child, I'd like you to make two mistakes so that the parent can practice the corrective procedures during the teaching part, and one mistake for each of the activities on the Home Activity Sheet. I will come around to answer any questions.

So, let's look at the first activity on activity sheet # 1. (read) As you read the questions, please record your child's response, and if it is right or wrong. Presented like role-play means that if your child made a mistake, you followed the corrective procedures in the way you practiced it today and asked the question in the same way. Comfortable with presentation means that you feel confident that material is presented like the role-

play, and you feel you understand the material and can answer a content-related question from your child.

Let's look at the corrective procedures (read from Corrective Procedures sheet).

### Role Plays

OK, let's break into groups of two. Remember, the child makes two mistakes during the teaching procedure, and one mistake for each of the activities on the Home Activity Sheet. Remember also to praise your child for hard work and trying her or his best as well as correct responses.

### Conclusion

You have the book, and you have the activity sheets. Remember. During the first night, read the story and talk about it with your child. During the second night, teach the specific skill and complete the short Home Activity Sheet. During the third night, you can review the book if you'd like and complete the Home Activity Sheet. During the fourth night, complete the third activity sheet. Please remember to write down the amount of time the activity took to complete and the total time. Under comments, you can write down any difficulties you or your child experienced, or any other comments you would like me to know about.

I will call each of you this week to check-in. We will meet.....

Thanks very much again for coming, and I hope this week goes well.

## APPENDIX G

### TRAINING AND CORRECTIVE PROCEDURES FOR THE FIVE SKILL AREAS

#### Rhyming

Say, “we’re going to talk about words that rhyme, or sound alike. Listen to the words I say. They all rhyme with each other; they all sound alike. ‘Cat’ ‘Mat’ ‘Sat’ Do you hear how they all sound a lot alike?”

1. Say, “now we’re going to practice with rhyming words.”
2. Say the word “**RED**” to your child.
  - Say the word slowly and have your child look at your mouth as you say the word. **“Look at the shape my mouth makes when I say the word, ‘red’.”**
  - Have your child trace your mouth as you say the word. **“Trace your finger around my mouth to feel the shape that my mouth makes when I say the word ‘red’.”**
  - Have your child say the word red and trace her/his mouth. **“Now you say the word ‘red’ slowly. Do you feel the shape your mouth makes? Can you trace your mouth as you say the word slowly?”**

Say, “Now I am going to say a word that rhymes with ‘red.’ It sounds a lot like the word ‘red’ but it’s a little different. Listen. ‘Bed’.”

- Explain why the two words rhyme. **“The last part of the word red sounds the same as the last part of the word bed, so the word red rhymes with the word bed.”**
- **“Listen. r -ed rhymes with b-ed.”**
- Say the word ‘red’ and ask your child to look at the shape of your mouth. Then say the word ‘bed’ and ask your child to look at the shape of your mouth. **“look at my mouth when I say the two words that rhyme. My mouth makes the same shape for both words.”**
- Point out how the shape of your mouth is the same when two words rhyme and that the sounds at the end of the words are the same. **“When words rhyme, they make the same sounds at the end.”**

Say, “now I’m going to say a word that doesn’t rhyme with ‘red.’ Listen ‘hit.’”

- **“The last part of the word red doesn’t sound the same as the last part of the word hit, so the word red doesn’t rhyme with hit”.**
- **“Listen, r-ed does not rhyme with h-it”.**
- Say the word ‘red’ and ask your child to look at the shape of your mouth. Then say the word hit and ask your child to look at the shape of your mouth
- point out how the shape of your mouth is not the same when two words do not rhyme and that the sounds at the end of the words are not the same.

Say, “let’s practice. Does hit rhyme with mit”?

- If your child says yes, say, “**that’s right, hit rhymes with mit. They both end with the same sounds.**”
- If your child says no, use this corrective procedure.

#### Corrective Procedures

“**Hit does rhyme with mit. Listen h-it, m-it. Do you hear how the -it- part of both words sound the same? H-it/m-it. That means hit rhymes with mit. Let’s try some more words.**

Trial 2: “Does ‘lip’ rhyme with ‘rip’?”

Trial 3: “Does ‘sit’ rhyme with ‘rip’?”

You are now ready to proceed to the first activity sheet.

## Syllable Splitting

### 1. Parts of words

- Say, **“we’re going to think of the parts of words (or the syllables in words).”**
- Say your child’s name. E.g. Rebecca.
- Say the name again, but this time break it into its syllables (parts) re-bec-ca
- **“Do you hear how the name Rebecca has three different parts in it?”**
- Clap the different parts.

### 2. One part, two parts, three parts

- Say **“some words only have one part, some have two and some have three, or even more.”**
- **“the word cat has one part...see, when you clap the word you can’t break it up into more than one part.”** (clap the word.)
- **“the word dinner has two parts. Listen as I break the word into its two parts: /din/ /ner/.”**
- **“Can you clap the two parts of the word ‘dinner’?”**
- **The word Goldilocks has three parts. Listen to me clap the word and break it up into its three parts /gold/ /i/ /locks/.”**

### 3. Practice

- Say, **“let’s clap the parts of some words for practice.”**
- **“‘mommy.’ Can you clap the parts of the word ‘mommy?’ Good. Mommy has two parts, /mom//my/.”**
- **“bear. Can you clap the parts of the word ‘bear?’ Good. Bear has only one part, /bear/.”**

## Correction Procedures

- say the word (e.g., mommy).
- (For words with more than one syllable) say, **“listen to the word as I say it slowly and listen to where I pause in between the two parts. /mom/---/my/.”**
- **The first part of mommy is /mom/ The second part of mommy is /my/. Listen mom-my.**
- Clap the two parts.
- Say, **“now you clap the parts of the word ‘mommy’.”**
- (For words with one syllable) say, **“Listen to the word as I say it slowly and listen to the parts of the word. ‘Bear’. ‘Bear’ only has one part, so I can only clap once. I can’t break it into any parts. Listen /bear/.”**

- Say, “now you clap the parts of the word ‘bear’.”
- 2-syllable words:  
trial 2: ‘treated’ (/treat/ /ed/)  
trial 3: ‘catfish’ (/cat/ /fish/)
- 1-syllable words:  
trial 2: ‘wolf’  
trial 3: ‘dog’

You are now ready to proceed to activity # 1

## Letters and Letter-Sound Correspondence

1. Say, **“we’re going to practice some of the letters you know and learn some new ones.”**
  - Start with the first letter of your child’s name, as that is a letter she/he is familiar with.
  - Write the lower-case letter on a piece of paper.
  - Say, **“what letter is this?”**
  - Have your child trace the letter with her/his finger. **“Use your finger to trace the letter as if you were writing it.”**
  - As your child is tracing the letter, have her or him name the letter.
  - Write the upper-case letter on a piece of paper, and say, **“what letter is this?”**
  - Point to the upper-case letter and say, **“this is also the letter ‘\_’, but this is a big ‘\_’ and this, (point to the lower-case letter) is a small ‘\_’.”**
  - Have your child trace the letter with her/his finger. **“Use your finger to trace the letters as if you were writing it.”**
  - As your child is tracing the letter, have her or him name the letter.
2. Say, **“now we’re going to say the sound the letter makes. Every letter has its own sound.”**
  - Say the letter. Then say, **“listen to the sound the letter -makes.”** Then say the sound slowly (e.g. for the letter ‘s’ say, ‘s makes the sound ssssss’).
  - Say, **“look at the shape of my mouth when I say the sound the letter ‘s’ makes.”**
  - Say, **“now you say the sound the letter ‘s’ makes. Do you feel how your mouth is shaped when you say the sound?”** (You can ask your child to trace her/his mouth.)
3. Write the letter ‘b’ on a piece of paper, and follow the directions from item # 1 and item # 2.
4. Write the letter b’ and ‘s’ on a piece of paper.
  - Say **“point to the letter ‘b’”**
  - **“Point to the letter ‘s’”**
  - **“Point to the letter that makes the sound /s/”**
  - **“Point to the letter that makes the sound /b/”**
  - **“What sound does this letter (point to the ‘s’) make”?**

### Corrective Procedures

- Letters: Say **“this is the letter ‘\_’. Let’s trace it with our fingers.”**
- Say, **“What letter is this? Very good. This is the letter ‘\_’.”**

- Say, “This is a small/big ‘\_’.”
- Sounds: Say, “the letter ‘\_’ makes the sound / /. Listen, //. Do you feel how your mouth is shaped when you say that sound? Now you say the sound. Good. What sound does the letter ‘\_’ make? Very good.”

Proceed to activity #1 and follow the directions.

## Onset Fluency

### 1. Connections to letter-sounds

- Remind your child of letter-sound concept by saying, **“remember last week we said the sounds that letters make? Like the letter ‘b’ in ‘ball’ makes the sound /b/, right? This week we’re going to think about the sound a word begins with.”**

### 2. Say the word “mommy” to your child.

- **“Mommy begins with the sound /m/ /m/ mommy.”**
- **“Listen /m/ /m/ /m/ mommy.”**
- **“Do you hear how the first sound in the word ‘mommy’ is /m/?”**
- **“What sound does mommy begin with?”**
- If your child says the letter, say, **“you’re right, ‘mommy’ begins with the letter ‘m’, but we’re looking for the first sound in the word ‘mommy’, not the first letter. The first sound is /m/.”**

### 3. Say the word “dog” to your child.

- Ask your child, **“what sound does ‘dog’ begin with?”**
- Follow step 2

## Corrective Procedures

- If your child responds incorrectly, say **“dog. Listen to the first sound as I say the word again. /d/-og. Listen /d/ /d/ /d/ dog. Remember, we need to listen for the very first sound.”**
- Say, **“look at the shape of my mouth when I say the sound that dog begins with /d//d/ /d/ dog.”**
- Ask your child to make the /d/ sound and to think about the shape of her/his mouth as the sound is being formed. **“When you say the sound that the word ‘dog’ begins with /d/, your mouth makes a /d/ shape. Do you feel the shape your mouth is making when you say /d/?”**
- Repeat the word ‘dog’ and say, **“what sound does ‘dog’ begin with?”**
- **Trial 2: ‘bag’**
- **Trial 3: ‘red’**

Proceed to activity #1 and follow the directions.

## Phonemes

### 1. Onset fluency reminder

- Say, “remember last week we talked about the sounds words begin with? Can you tell me what sound the word ‘cat’ begins with?”
- If correct, say, “that’s right, the word cat begins with the sound /k/.”
- If incorrect, say “‘cat’. Listen /k/ /k/ /k/ cat. The first sound in the word cat is /k/.” You can also remind your child of onset fluency by using your child’s name.
- If your child says the letter-name instead of the sound, say, “that’s the letter ‘cat’ starts with, but we’re looking for the first sound in the word ‘cat’, not the first letter. The first sound is /k/.”

### 2. Say, “now we’re going to think about the last sound in words.”

- “Listen to the word cat again, and this time think about the last sound you hear in the word. ‘cat’. Cat-t-t-. The last sound in the word cat is /t/ cat. /t/.”
- “Let’s try another one. This time I’ll say a word and I want you to tell me what the last sound you hear in the word is. ‘cap’ What’s the last sound you hear?”
- If correct, say, “that’s right, the last sound in ‘cap’ is /p/ cap-p-p.”
- If your child says the letter-name instead of the sound, say, “that’s the letter ‘cap’ ends with, but we’re looking for the last sound in the word ‘cap’, not the last letter. The last sound is /p/.”

### Correction Procedure

- “Listen to the word as I say it slowly. C-a-p. C-a-p-p-p.”
- “Do you hear the sound /p/ at the end of the word? /p/ is the last sound in the word. Remember to listen to the last sound you hear.”
- Trial 2: ‘mat’
- Trial 3: ‘pad’

### 3. “Now we’re going to think about all of the sounds that are in the word ‘cat’, not just the first or the last sound.”

- “Listen again to the word ‘cat’. Listen to me clap each sound in the word ‘cat’ (Clap each sound). The sounds in ‘cat’ are (clap): /c/ /a/ /t/. ‘c-a-t’ /c/ /a/ /t/. “‘cat’...”Now you clap each sound you hear in the word ‘cat’” Can you now tell me the sounds you hear in the word ‘cat’?”
- “Now let’s try another word? What are the sounds in the word ‘dog’?”

### Correction Procedure

- Ask for the first sound in the word 'dog.' **"Listen to the word again. This time, try to listen to the first sound. 'dog'. What is the first sound in the word 'dog'?"**
- If correct, say, **"that's right. The first sound in the word 'dog' is /d/."**
- If incorrect, say, **"listen 'dog' /d/ /d/ /d/ 'dog'. The first sound in the word 'dog' is /d/."**
- Ask for the next sound in the word dog. **"Listen to the word again. This time tell me what the sound you hear after the /d/ is. 'dog.' What is the next sound in the word 'dog'?"**
- If correct, say, **"that's right. The next sound in the word is /o/."**
- If incorrect, say, **"listen. 'dog' /d/ /o/ /o/ /o/ /g/. The next sound in the word 'dog' is /o/."**
- Ask for the last sound in the word 'dog.' **"Listen to the word again. Listen for the last sound in the word 'dog.' What is the last sound you hear in the word 'dog'?"**
- If correct, say, **"that's right, the last sound in the word 'dog' is /g/."**
- If incorrect say, **"listen, 'dog' /d/ /o/ /g/ /g/ /g/. The last sound in the word 'dog' is /g/."**
- **Listen 'd-o-g'. /d/ /o/ /g/. Clap each sound, then say, "when you put those sounds all together they make the word 'dog'."**
- **"Now you try. What are the sounds in the word 'dog'?"**
- Say, **"remember, we're looking for the sound, not the letter."**
- **trial 2: 'at'**
- **Trial 3: 'fat'**

Proceed to the activity sheet and follow the directions

APPENDIX H

SAMPLE HOME ACTIVITY SHEETS

Home Activity Sheet: Three Little Pigs: Week 4 # 3 \*

Activity 1: Matching initial sound to word:

What to say to you child: “I want you to think about the sounds words begin with.  
Does basket begin with a /b/ or a /m/?”

#	Item	Child response	Correct response? Y/N	Presented like role-play? Y/N	Comfortable with presentation? Y/N
1	Does three start with /th/ or /ch/?				
2	Does were start with /m/ or /w/?				
3	Does cottage start with /p/ or /k/?				
4	Does now start with /l/ or /n/?				
5	Does very start with /w/ or /v/?				
6	Does time start with /g/ or /t/?				
7	Does go start with /b/ or /g/?				
8	Does world start with /w/ or /y/?				
9	Does fortune start with /l/ or /f/?				
10	Does sir start with /d/ or /s/?				

Total time for Activity 1: \_\_\_\_\_ minutes

**Activity 2: Sound matching (initial)**

What to say to your child: **“Listen to the sound I say then guess which word I say begins with that sound. Which word begins with the sound /s/? basket, tree, create, stones?”**

#	Item	Child response	Correct response? Y/N	Presented like role-play? Y/N	Comfortable with presentation? Y/N
1	/h/: very, house, wolf, little				
2	/r/: three, wolf, road, time				
3	/g/: time, go, sold, hay				
4	/m/:myself, world, seek, fortunes				
5	/f/: two, lived, finished, up				
6	/l/: house, finished, let, along				
7	/h/: had, eaten, carry, wolf				
8	/sh/: carrying, please, shortly, sticks				
9	/m/: stick, cozy, made, came				
10	/r/: himself, cried, run, no				

Total time for activity 2: \_\_\_\_\_ minutes

Activity 3: Initial Sounds in Words:

What to say to your child: “Listen to a word I say and tell me the first sound you hear in the word. What’s the first sound in the word valley?” (/v/).

#	Item	Child response	Correct response? Y/N	Presented like role-play? Y/N	Comfortable with presentation? Y/N
1	carrying /c/				
2	sit /s/				
3	gobbled /g/				
4	would /w/				
5	road /r/				
6	down /d/				
7	finished /f/				
8	hard /h/				
9	sooner /s/				
10	blow /b/ or /bl/				

Time to complete activity 3: \_\_\_\_\_ minutes

Total time to complete home activity sheet: \_\_\_\_ minutes

Comments:

\* Adapted from Candace Goldsworthy’s *Sourcebook of Phonological Awareness Activities: Children’s Classic Literature*.

Home-Activity Sheet: Three Billy Goats Gruff: Week 9 # 2 \*

Activity 1: Syllable Blending

What to say to your child: “Let’s put the parts of words together. Put these parts together to make a word. But +t er.” (butter)

#	Item	Child response	Correct response? Y/N	Presented like role-play/script? Y/N	Comfortable with presentation? Y/N
1	kick + ing				
2	riv + er				
3	hill + side				
4	broth + er				
5	moun + tain				
6	sec + ond				
7	cen + ter				
8	mid +dle				
9	young + est				
10	hun+ gry				

Total time for Activity 1: \_\_\_\_\_ minutes

**Activity 2: Blending Sounds to Form a Word:**

What to say to your child: “ Now we’ll put sounds together to make a word. Put theses sounds together to make a word: /s/ /p/ /o/ /t/” (spot)

#	Item	Child response	Correct response? Y/N	Presented like role-play/script? Y/N	Comfortable with presentation? Y/N
1	poke: (/p/ /long o/ /k/)				
2	fat: (/f/ /a/ /t/)				
3	key: (/k/ /long e/)				
4	gruff: (/g/ /r/ /u/ /f/)				
5	name: (/n/ /long a/ /m/)				
6	hill: (/h/ /i/ /l/)				
7	trip: (/t/ /r/ /short I/ /p/)				
8	cross: (/c/ /r/ /uh/ /s/)				
9	kicked: (/k/ /short I/ /k/ /t/)				
10	teeth: (/t/ /long E/ /th/)				

Total time for activity 2: \_\_\_\_\_ minutes

**Activity 3: Segmenting initial sounds in words**

What to say to your child: “Listen to word I say and tell me the first sound you hear in the word. What’s the first sound in the word ‘valley’?” /v/

#	Item	Child response	Correct response? Y/N	Presented like role-play/script? Y/N	Comfortable with presentation? Y/N
1	poke				
2	billy goat				
3	tender				
4	dinner				
5	called				
6	gobble				
7	mean				
8	name				
9	center				
10	horn				

Total time for Activity 3: \_\_\_\_\_ minutes

Total time for home activity sheet: \_\_\_\_\_ minutes

Comments

\* Adapted from Candace Goldsworthy’s *Sourcebook of Phonological Awareness Activities: Children’s Classic Literature*.

## APPENDIX I

### CORRECTIVE PROCEDURES FOR HOME ACTIVITY SHEET ACTIVITIES

#### Corrective Procedure for Rhyming

##### Recognizing Rhyme

- Say, “We’re trying to see if two words rhyme. If the two words sound alike at the end they rhyme.”
- Say, “Do you hear how the words ‘cat’ and ‘bat’ sound the same? They both end with ‘at’. They rhyme.”
- If the two words rhyme, say, “the words ‘\_\_\_\_\_’ and ‘\_\_\_\_\_’ also rhyme. They sound alike. Listen, ‘\_\_\_\_’ rhymes with ‘\_\_\_\_\_’.” Say the words slowly and emphasize the rhyme.
- If the two words do not rhyme, say, “The words ‘\_\_\_\_’ and ‘\_\_\_\_’ do not rhyme. They do not sound alike. Listen, ‘\_\_\_\_’ does not rhyme with ‘\_\_\_\_\_’.”
- Say, “Remember, we’re listening to hear which two words rhyme with each other, or sound like each other.”

##### Matching Rhyme

- Say, “We’re trying to find the word that matches with the first word I said.”
- Say, “Let’s go through each word in the list and see if it rhymes with the first word I said.”
- Say the trigger word. Then say, “I want you to tell me if ‘trigger word’ rhymes with ‘first word’?”
- If your child responds correctly, and the trigger word rhymes with the list word, say, “good job. ‘\_\_\_\_’ does rhyme with ‘\_\_\_\_\_’.”
- If your child responds correctly and the trigger word does not rhyme with the list word, say, “good job, ‘\_\_\_\_’ does not rhyme with ‘\_\_\_\_\_’. They do not sound the same.”
- If your child responds incorrectly, say, “‘\_\_\_\_’ does/does not rhyme with ‘\_\_\_\_\_’.”
- Say both words slowly and emphasize the rhyming part, if the pair rhymes.
- Say the trigger word and proceed with the second word in the list and follow the above directions.
- Proceed down the list of words.

##### Identifying Rhyme Oddity

- Say, “We are trying to listen to the word that does not rhyme with the other words. One word does not sound at all like the other three.”
- Say, “Listen to the word I say, and tell me if it rhymes with this word.” (Say the first two words).

- If your child responds correctly say, “Good job, ‘ \_\_\_\_ ’ does/does not rhyme with ‘ \_\_\_\_ ’. They do/do not sound alike.”
- If your child responds incorrectly say, “Listen, ‘ \_\_\_\_ ’ does/does not sound like ‘ \_\_\_\_ ’. They rhyme/ don’t rhyme.”
- Say, “Can you hear how they do/do not sound alike?”
- Proceed through the list.
- At the end, repeat the initial question.

## Corrective Procedures For Syllables:

### Syllable Counting:

- Say, “we’re trying to count how many parts are in a word. Some words only have one part; others have two or three or even more.”
- Say, “listen to the word again.” (say the word slowly) “ ‘ \_\_\_\_\_ ’ has two parts or two syllables in it. Listen as I say each part.”
- Say, “the first part of ‘target word’ is ‘first syllable.’ The second part of ‘target word’ is ‘second syllable.’ So there are two syllables in the word ‘target word.’
- Say the word again, emphasizing each syllable with a space.

### Syllable Blending:

- Say, “we’re trying to put the sounds of a word, or its syllables together to make one word. Imagine taking two pieces of leggo and putting them together to make one piece. That is what we’re doing with the parts of the words I say. We’re putting them together to make one word.”
- Say, “listen as I say each part of the word, and then we will put them together to make one word.”
- Say, “the first part of ‘ \_\_\_\_\_ ’ is: (say the first part of the word).
- Say, “the second part of ‘ \_\_\_\_\_ ’ is: (say the second part of the word).
- Say, “if we put ‘first part of word’ with ‘second part of word’ we get the word ‘ \_\_\_\_\_ ’. Listen: (say the first part of the word and the second part of the word and then say the entire word.”
- Say, “let’s try some more. Remember to put together the parts you hear to make one word.”

### Syllable Splitting:

- Say, “we’re trying to pull apart the sounds of a word, or its syllables.”
- Say, listen to the word as I say it slowly.” (Say the word).
- Say, “the first part of ‘target word’ is ‘ \_\_\_\_\_ ’. The next part of ‘target word’ is ‘ \_\_\_\_\_ ’.
- Say, “think about clapping the parts of the word to break it into different parts.” (Clap and say the first syllable. Clap and say the second syllable).
- Say, “let’s try some more words. Remember to pull the words apart into their different parts.”

## Corrective Procedures for Letter-Identification and Letter-Sounds

### Tracing and Forming Letters

1. Say, “we’re looking for the letter ‘\_’.”
2. Say, “watch as I write the (small/big) letter ‘\_’ on this paper.” (Write the letter).
3. Say, “can you trace the letter ‘\_’ with your finger?”
4. Say, “good job. You just traced the letter ‘\_’”
5. Point to the letter. Say, “what letter is this?”

### Hear the Sound

1. Say, “we’re listening for the sound the letter ‘\_’ makes. Can you tell me what sound the letter ‘\_’ makes?”
2. If correct, say, “good job, the letter ‘\_’ does make the sound / /”
3. If incorrect, say, “the letter ‘\_’ makes the sound / /. Listen: / / / / / .”
4. Say, “Listen to the word, and tell me if you hear the sound / / in the word.” (Say the word).
5. If correct, say, “good job, the word ‘\_\_\_\_\_’ does have the sound / / in it.”
6. If incorrect, say, “listen. “\_\_\_\_\_” Do you hear how the word “\_\_\_\_\_” has the sound / / in it?” Say the word slowly and emphasize the sound. (e.g., ‘cat’ /k/ /k/ /k/ ‘cat’).

## Corrective Procedures for Onset Fluency

### Matching Initial Sound to Word

- If your child said the letter name instead of the sound, say, “you’re right, ‘pig’ does begin with the letter ‘p’. But we’re thinking about the sounds that words start with, not the letters.”
- Say, ‘pig’ begins with the sound /p /. Listen. /p/ /p/ /p/ ‘pig.’”
- Say, “can you make the sound /p/?”
- Say, “the word ‘pig’ begins with the sound /p/. /p/ is the very first sound we hear when we say the word ‘pig.’”
- Let’s try some more words. Remember, we’re trying to find the sound the word begins with.”

### Sound Matching (Initial)

- Say, “remember, we’re looking for the word that begins with the sound, e.g., /f/. Only one of the words in the list begins with the sound /f/.”
- Say the first word in the list. Say, “does ‘blew’ begin with the sound /f/?”
- If correct, say, “that’s right, ‘blew’ does not begin with the sound /f/. ‘blew’ begins with the sound /b/. We need to listen for the word that begins with the sound /f/.”
- If incorrect, say, “‘blew’ does not begin with the sound /f/. ‘Blew’ begins with the sound /b/. We need to listen for the word that begins with the sound /f/.”
- Proceed through the list.

### Initial Sounds in Words

- If your child said the first letter, say, “that’s right, the first letter in ‘little’ is ‘l’. But we’re looking for the first sound in ‘little.’ I want you to tell me the very first sound you hear in the word I say.”
- Say, “listen to the word and think about the very first sound you hear.” Say ‘little’ // // // // ‘little.’ The first sound in ‘little’ is //. ‘Little’ begins with the sound //.”
- Say, “let’s try some more words. Don’t forget to listen to the very first sound you hear.”

## Corrective Procedures for Phonemes

### Segmenting Final Sounds In Words:

- If your child said the letter name instead of the sound, say, “you’re right, ‘woke’ does end with the letter ‘e’. But we’re thinking about the sounds that words end with, not the letters.”
- Say, “listen again to the word ‘woke,’ but this time listen for the very last sound you hear. ‘Woke /k/ /k/ /k/ ‘woke’.
- Say, “can you make the sound /k/?”
- Say, “the word ‘woke’ ends with the sound /k/. /k/ is the very last sound we hear when we say the word ‘woke.’”
- “Let’s try some more words. Remember, we’re trying to find the sound the word ends with.”

### Blending Sounds To Form A Word:

- Say, “remember, we’re listening to a bunch of sounds and putting them all together to make one word.”
- Say the word, (e.g., ‘face’) and then, “listen to the first sound I say, and repeat it after me. /f/.”
- Say, “now listen to the second sound I say, and repeat it after me. /long a/.”
- Say, “can you connect the first sound /f/ with the second sound /long a/?” If incorrect, say, “/f/ and /long a/ together are /fay/.”
- Say, “now listen to the third sound I say, and repeat it after me. /s/.”
- Say, “/f/ /long a/ and /s/ make the word ‘face.’ Listen /f/ /long a/ /s/, ‘face.’”
- “Let’s try some more. Remember to listen to the sounds I say and then connect them all together to make a word.”

### Identifying All Sound In Words:

- Say, “remember, we’re trying to say all of the sounds that we hear in a word. We’re breaking words into their sounds.”
- Say the word. (e.g., ‘few’) Say, “listen to the very first sound in the word ‘few.’ /f/. /f/ ‘few.’”
- Say, “the first sound in the word ‘few’ is /f/.”
- Say, “now listen to the next sound in the word ‘few’. /y/. /f/ /y/ are the first two sounds in the word ‘few.’”
- “Listen to the last sound in the word ‘few.’ /oo/ “
- “/f/ /y/ /oo/ are the sounds we hear in the word ‘few.’”
- “Listen to me clap after each sound in the word ‘few.’ (clap). Now you clap after each sound. Can you say all of the sounds you hear in the word ‘few?’”
- Now we’ll try some more.”

## APPENDIX J

### REINFORCEMENT PROCEDURES HAND-OUT

#### Reinforcement Procedures: Praise For Working Hard And For Doing A Good Job

##### Before Beginning A Home-Activity Sheet:

- Remind your child of the good job she or he did the night before
- Remind your child that you want her or him to do best work again

##### During Home-Activity Sheets:

- Praise your child for trying: Even if your child responds to an item incorrectly, you can praise her or him for working hard by saying:
  - ✓ “these are really hard, but you’re doing a great job.”
  - ✓ “I appreciate how hard you’re trying.”
- If you’re child responds correctly, you can praise her or him by saying:
  - ✓ “That’s great...you’re doing a great job!”
- Praise your child after every 2-3 items

##### At The End Of An Activity (10 Items):

- Give extra praise:
  - ✓ “Good job. You got them all right!”
  - ✓ “Good job. You are doing great work!”

##### At The End Of An Activity Sheet:

- Praise your child for completing the whole sheet and working hard.
  - ✓ “Great job! You did a whole sheet!”
- Remind your child that you will be doing more activities the next night.
  - ✓ “You worked really hard tonight. Tomorrow we’re going to do some more work. Thanks for doing your best!”

## APPENDIX K

### GENERAL CORRECTIVE PROCEDURES HAND-OUT

#### **CORRECTIVE PROCEDURES:**

##### **Tips for frustration:**

If your child appears frustrated:

- Remind your child that she or he is doing good work.
- Remind your child that there is a little more work to do and to try her or his best.
- If your child continues to appear frustrated, stop for the night, but remind your child that you know she or he can do it and that you both will try some more the next night.
- If your child does not seem frustrated, do not terminate the activity.

#### **DISCONTINUE RULE:**

- After the first three incorrect responses, follow the corrective procedures for the particular activity.
- If your child incorrectly responds to three items in a row, discontinue the activity.

We'll go over specific corrective procedures as we get to them.

## APPENDIX L

### TRAINING OBJECTIVES

#### Training One

**General Objective:** Through trainer instruction, parents will learn about the overall objectives of the 5 training sessions, the role of language, letter-identification and phonological awareness in beginning reading, tips for handling frustration, and reinforcement and corrective procedures.

**Objective One:** Introduction of participants and outline of the trainings.

**Objective Two:** Provide Instruction and examples of parents as teachers in areas of basic skills, language, and literacy.

**Objective Three:** Trainer will discuss overall reinforcement and corrective procedures and go over each sheet.

**Objective Four:** Trainer will define phonological awareness and phoneme and provide examples. Trainer will explain why phonological awareness is an important pre-reading skill.

**Objective Five:** Trainer will introduce the skill of rhyming and the teaching and corrective procedure

**Objective Six:** Trainer will discuss the activities that parents will do at home and how role-plays and materials will be incorporated into the trainings.

**Objective Seven:** Trainer will introduce the week's Home Activity Sheets, and the correct procedures for each activity.

**Objective Eight:** Parents will participate in role-plays and receive corrective feed-back from trainer.

**Objective Nine:** Complete evaluation sheet for Training one.

#### Training Two

**General Objective:** Through role-playing, parents will demonstrate an understanding of incorporating syllable tasks into home-based literacy activities.

**Objective One:** Trainer and participants will review the materials from week one, and discuss specific problems that arose during the Home Activity Sheets.

**Objective Two:** Parents will be introduced to the concept of syllable blending and splitting through trainer instruction and examples.

**Objective Three:** Trainer will distribute teaching and corrective procedures for syllable splitting and blending, and will discuss the procedures with parents.

**Objective Four:** Trainer will distribute Home Activity Sheets and will discuss each activity and the corrective procedures with parents.

**Objective Five:** Parents will participate in role-plays and receive corrective feed-back from trainer.

**Objective Six:** Participants will complete an evaluation form for session two.

### Training Three

**General Objective:** Through role-playing, parents will demonstrate an understanding of incorporating letter identification and letter-sound correspondence tasks into home-based literacy activities.

**Objective One:** Trainer and participants will review the materials from week two, and discuss specific problems that arose during the Home Activity Sheets.

**Objective Two:** Parents will be introduced to the concept of letter identification and letter-sound correspondence through instruction and examples.

**Objective Three:** Trainer will distribute teaching and corrective procedures for letter identification and letter-sound correspondence, and will discuss the procedures with parents.

**Objective Four:** Trainer will distribute home-activity sheets and will discuss each activity and the corrective procedures with parents.

**Objective Five:** Parents will participate in role-plays and receive corrective feed-back from trainer.

**Objective Six:** Evaluation session three will be completed.

### Training Four

**General Objective:** Through role-playing, parents will demonstrate an understanding of incorporating onset fluency tasks into home-based literacy activities.

**Objective One:** Trainer and participants will review the materials from week three, and discuss specific problems that arose during the completion of Home Activity Sheets.

**Objective Two:** Parents will be introduced to the concept of onset fluency through instruction and examples.

**Objective Three:** Trainer will distribute teaching and corrective procedures for onset fluency, and discuss the procedures with parents.

**Objective Four:** Trainer will distribute Home Activity Sheets and will discuss each activity and the corrective procedures with parents.

**Objective Five:** Parents will participate in role-plays and receive corrective feed-back from trainer.

**Objective Six:** Evaluation for session four will be completed.

#### Training Five

**General Objective:** Through role-playing, parents will demonstrate an understanding of incorporating phoneme blending and segmentation tasks into home-based literacy activities.

**Objective one:** Trainer and participants will review the materials from week four, and discuss specific problems that arose during the completion of Home Activity Sheets.

**Objective Two:** Parents will be introduced to the concept of Phoneme tasks through instruction and examples.

**Objective Three:** Trainer will distribute teaching and corrective procedures for phoneme tasks and will discuss the procedures with parents.

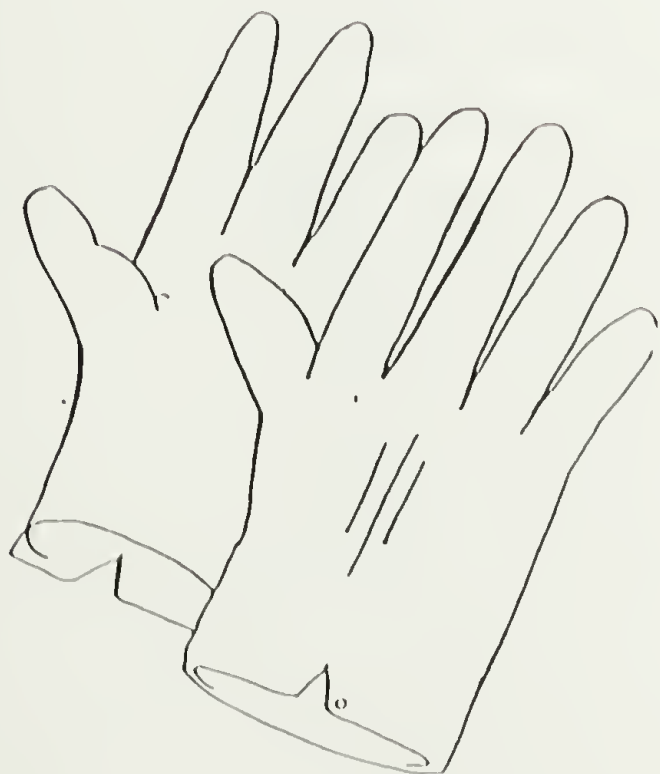
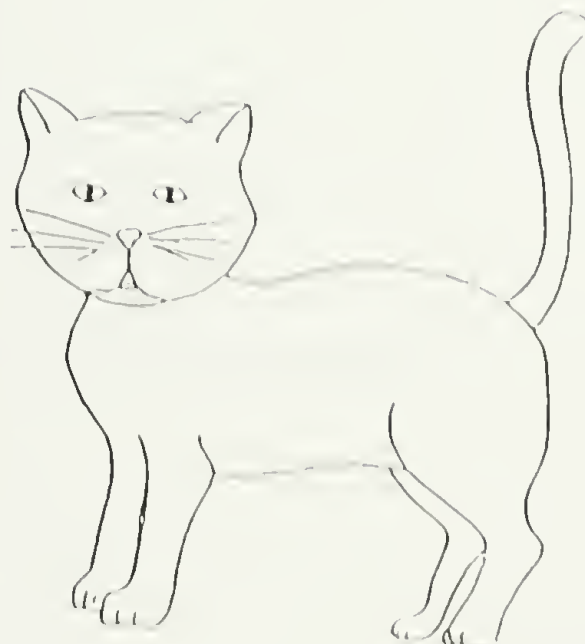
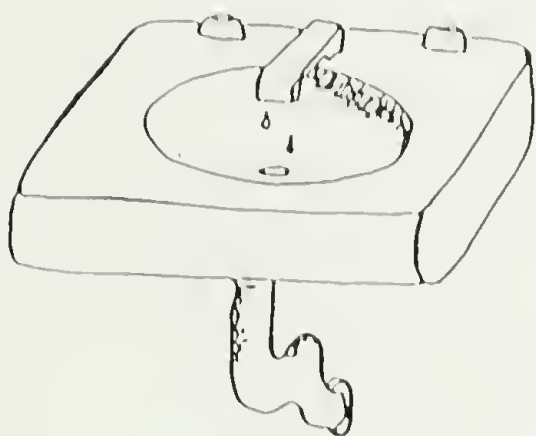
**Objective Four:** Trainer will distribute Home Activity Sheets and will discuss each activity and the corrective procedures with parents.

**Objective Five:** Parents will participate in role-plays and receive corrective feed-back from trainer.

**Objective Six:** Evaluation for session five will be completed.

APPENDIX M

SAMPLES OF DYNAMIC INDICATORS OF BASIC EARLY LITERACY SKILLS



Child Identification # \_\_\_\_\_

*Onset Fluency Baseline Day #1*

This is a sink, a cat, gloves, and a hat (point to pictures).

Question

Score

1. Which picture begins with 'gl'.

\_\_\_\_/1\_\_\_\_

2. Which picture begins with 's'.

\_\_\_\_/1\_\_\_\_

3. Which picture begins with 'c'.

\_\_\_\_/1\_\_\_\_

4. What sound does 'hat' begin with.

\_\_\_\_/1\_\_\_\_

This is a purse, a banana, a lamb, and a stove (point to pictures).

5. Which picture begins with 'st'.

\_\_\_\_/1\_\_\_\_

6. Which picture begins with 'p'.

\_\_\_\_/1\_\_\_\_

7. Which picture begins with 'b'.

\_\_\_\_/1\_\_\_\_

8. What sound does 'lamb' begin with.

\_\_\_\_/1\_\_\_\_

This is a hat, a towel, a duck, and a bone (point to pictures).

9. Which picture begins with 'd'.

\_\_\_\_/1\_\_\_\_

10. Which picture begins with 'b'.

\_\_\_\_/1\_\_\_\_

11. Which picture begins with 'h'.

\_\_\_\_/1\_\_\_\_

12. What sound does 'towel' begin with.

\_\_\_\_/1\_\_\_\_

This is a bus, a can, an eraser, and a rake (point to pictures).

13. Which picture begins with 'r'.

\_\_\_\_/1\_\_\_\_

14. Which picture begins with 'ear'.

\_\_\_\_/1\_\_\_\_

15. Which picture begins with 'b'.

\_\_\_\_/1\_\_\_\_

16. What sound does 'can' begin with.

\_\_\_\_/1\_\_\_\_

Total Time: \_\_\_\_\_

Total \_\_\_\_/16\_\_\_\_

Continued next page

Name \_\_\_\_\_

Date: \_\_\_\_\_

University of Oregon  
Dynamic Indicators of Basic Early Literacy Skills  
Letter Naming Fluency

Probe 1

c c N u Q M u h S i

n b e N F f o a K k

g p k p a H C e G D

b w F i h O x j I K

x t Y q L d f T g v

T V Q o w P J t B X

Z v U P R l V C l W

R J m O z D G y U Y

Z y A m X z H S M E

q n j s W r d s B l

r A E L c c N u Q M

Total: \_\_\_\_/110

Revised 01/14/98

Name \_\_\_\_\_

Date: \_\_\_\_\_

University of Oregon  
Dynamic Indicators of Basic Early Literacy Skills  
Phoneme Segmentation Fluency

Probe 1

bad	/b/ /a/ /d/	lock	/l/ /o/ /k/	____/6
that	/TH/ /a/ /t/	pick	/p/ /i/ /k/	____/6
mine	/m/ /ie/ /n/	noise	/n/ /oi/ /z/	____/6
coat	/k/ /oa/ /t/	spin	/s/ /p/ /i/ /n/	____/7
meet	/m/ /ea/ /t/	ran	/r/ /a/ /n/	____/6
wild	/w/ /ie/ /l/ /d/	dawn	/d/ /o/ /n/	____/7
woke	/w/ /oa/ /k/	sign	/s/ /ie/ /n/	____/6
fat	/f/ /a/ /t/	wait	/w/ /ai/ /t/	____/6
side	/s/ /ie/ /d/	yell	/y/ /e/ /l/	____/6
jet	/j/ /e/ /t/	of	/o/ /v/	____/5
land	/l/ /a/ /n/ /d/	wheel	/w/ /ea/ /l/	____/7
beach	/b/ /ea/ /ch/	globe	/g/ /l/ /oa/ /b/	____/7

Total \_\_\_\_/75

Revised: 02/10/98

## APPENDIX N

### EVALUATION FORM

Evaluation: Training 5

1. Was the information from this training presented clearly?

\_\_\_\_\_ Yes                      \_\_\_\_\_ Somewhat                      \_\_\_\_\_ No

2. Based on the information presented, do you feel that you learned something new about phoneme segmentation and blending?

\_\_\_\_\_ Yes                      \_\_\_\_\_ Somewhat                      \_\_\_\_\_ No

3. Did the role-plays help you learn how to present phoneme procedures to your child?

\_\_\_\_\_ Yes                      \_\_\_\_\_ Somewhat                      \_\_\_\_\_ No

4. Did the role-plays help you learn how to present the corrective procedures for phoneme activities?

\_\_\_\_\_ Yes                      \_\_\_\_\_ Somewhat                      \_\_\_\_\_ No

5. Did you feel comfortable to make comments or ask questions?

\_\_\_\_\_ Yes                      \_\_\_\_\_ Somewhat                      \_\_\_\_\_ No

6. After completing this training, do you feel comfortable with your role in presenting phoneme skills?

\_\_\_\_\_ Yes                      \_\_\_\_\_ Somewhat                      \_\_\_\_\_ No

7. After completing this training, do you feel comfortable with your role in completing the home-activity sheets?

\_\_\_\_\_ Yes                      \_\_\_\_\_ Somewhat                      \_\_\_\_\_ No

8. Is there anything else about the training session you would like to comment in? Please do so below.

## APPENDIX O

### PARENT SATISFACTION SURVEY

Please rate on a scale from 1 to 5 the extent to which you agree or disagree with the following statements by circling the number that corresponds to your rating.

Please use the following scale in answering these questions:

1 = strongly agree

2 = agree

3 = neutral

4 = disagree

5 = strongly disagree

1. Overall, I am satisfied with the training provided to me.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

2. Overall, I feel that I understood the concepts of phonological awareness and letter-sound correspondence after the training.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

3. Overall, I feel that the trainer presented information clearly.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

4. Overall, I felt comfortable asking questions during the training sessions.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

5. Overall, I felt comfortable asking questions during telephone check-ins.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

6. Overall, I thought the role-play activities helped me understand how to complete the teaching procedures.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

7. Overall, I thought the role-play activities helped me understand how to complete the home-activity sheets.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

8. Overall, I thought the role-play activities helped me understand how to complete the corrective procedures.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

9. Overall, I found the scripts useful for presenting training concepts at home.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

10. Overall, I found the scripts useful for presenting corrective procedures at home.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

11. Overall, I felt comfortable participating in the home activities with my child.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

12. My child’s skills in phonological awareness increased as a result of the activities I did with my child.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

13. My child’s skills in letter-identification and letter-sound correspondence increased as a result of the activities I did with my child.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

14. Overall, I believe that the time it took to complete activities with my children was acceptable.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

15. Overall, I feel that the activities in the Home-Activity Sheets were acceptable.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

16. Overall, I believe that my child enjoyed completing the Home-Activity Sheets.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

17. Overall, I believe this training was a positive experience for my child and me.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

18. As a parent who completed this training, I would recommend a similar training to other parents of kindergarten children.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

19. I believe that I will continue to use similar activities during book-reading activities with my child now that the study is over.

1.	2.	3.	4.	5.
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Please comment on the following questions. If you need more room for your answer, please use the back of the sheet.

1. What was the most useful part of the training?
2. What was the least useful part of the training?
3. What would you recommend remain the same for future trainings?
4. What would you change for future trainings?
5. If you responded that you did not find the role-plays useful in terms of learning, practicing and feeling comfortable presenting material at home, what do you suggest I incorporate in future trainings that would allow parents an opportunity to practice and receive feed-back from me?
6. Please comment on any other factors regarding the training that will be useful for me as I plan future trainings.

## APPENDIX P

### ASSUMPTION TESTS FOR ANCOVA: SLOPE

A number of tests were run to determine the appropriateness of running an ANCOVA on the slope data for Onset Fluency, Letter-Identification and Phoneme Segmentation. Assumptions about the independence, normality and homogeneity of variance were assessed. A test of normality revealed that for Onset Fluency scores were positively skewed for the control group during baseline and normally distributed for the control group during the treatment phase, as well as normally distributed across both phases for the treatment group. Letter-Identification scores across groups and treatment phases were normally distributed. For Phoneme Segmentation, baseline scores were positively skewed for both the control and the treatment group, and positively skewed for the control group during the treatment phase. Scores were normally distributed for the treatment group during the treatment phase.

A box plot graph was used to determine if any subject's scores for both groups on each of the measures was significantly different from the group. The box plot graph revealed that for the onset fluency measure during baseline, one subject's scores were significantly different from the group (subject # 7). A check on the Phoneme Segmentation task during baseline for the treatment group revealed a significantly different score for subject 25. Since no significant pattern across the dependent variables was revealed, (i.e. the significant scores represented different subjects), a decision was made to retain the data on subject # 7 and subject # 25.

## APPENDIX Q

### ASSUMPTION TESTS FOR ANCOVA: LEVEL

A number of tests were run to determine the appropriateness of running an ANCOVA on the level data for Onset Fluency, Letter-Identification and Phoneme Segmentation. For Onset Fluency, scores were normally distributed across groups at the baseline phase and treatment phase. A boxplot graph revealed that none of the scores were significantly different from the group. For Letter Identification, scores were normally distributed across groups and phases. The boxplot graph revealed that no individual scores were significantly different from the group.

For Phoneme Segmentation, median scores were positively skewed for both groups during the baseline phase and normally distributed across both groups in the treatment phases. No scores for either group during baseline of treatment phase were significantly different from the group.

# APPENDIX R

## SLOPE CHANGES FOR ALL SUBJECTS ON EACH MEASURE

Table 18

Slope Changes for Individual Children in the Control Group on the Onset Fluency Measure

Onset Fluency	Subject Number	Positive Growth Score	Negative Growth Score	Zero Growth
	1		-1.1	
	2		-.56	
	3		-1.8	
	4		-.4	
	5		-1.5	
	6		-.18	
	7			0
	8		-1.9	
	9		-2.8	
	10	1.4		
	11		-2.8	
	12	3.6		
	13		-.15	
	14		-1.7	
	15	4		
	16		-6.7	
	17	.38		
	18	1.5		
	19	.73		

Table 19

Slope Changes for Individual Children in the Treatment Group for the Onset Fluency Measure

Onset Fluency	Subject Number	Positive Growth Score	Negative Growth Score	Zero Growth
	1		-.33	
	2	2.8		
	3			0
	4	1.6		
	5	2.1		
	6	4.5		
	7	1.7		
	8	1.9		
	9	1.6		
	10	17.25		
	11	4.25		
	12	1.6		
	13	3		
	14	.18		
	15	3.9		
	16	1.2		
	17	3.3		
	18	2.4		
	19	5.4		
	20	1.3		

Table 20

Slope Changes for Individual Children in the Control Group on the Letter-Naming Fluency Measure

Letter-ID	Subject Number	Positive Growth Score	Negative Growth Score	Zero Growth
	1	.32		
	2	.63		
	3			0
	4		-.32	
	5		-.84	
	6	1		
	7	.28		
	8	.54		
	9		-.018	
	10	.18		
	11	2.7		
	12		-1	
	13		-2.8	
	14	1.1		
	15		-.79	
	16		-.78	
	17	1.3		
	18		-.8	
	19		-.59	

Table 21

Slope Changes for Individual Children in the Treatment Group on the Letter-Naming Fluency Measure

Letter-ID	Subject Number	Positive Growth Score	Negative Growth Score	Zero Growth
	1	.92		
	2	2.8		
	3	1.9		
	4	.33		
	5		-.90	
	6		-.8	
	7		-.02	
	8		-1.8	
	9		-.76	
	10	2.9		
	11	1.8		
	12	1		
	13	2.8		
	14		-.18	
	15		-.86	
	16	1.7		
	17	.55		
	18		-.5	
	19		-1.8	
	20	1.2		

Table 22

Slope Changes for Individual Children in the Control Group on the Phoneme Segmentation Measure

Phoneme Segmentation	Subject Number	Positive Growth Score	Negative Growth Score	Zero Growth
	1			0
	2	1.3		
	3		-2	
	4		-.71	
	5			0
	6		-4.2	
	7			0
	8	1.8		
	9			0
	10		-2.5	
	11		-1.4	
	12	2.2		
	13	1.5		
	14	.9		
	15	.22		
	16	.04		
	17			0
	18	.43		
	19	.13		

Table 23

Slope Changes for Individual Children in the Treatment Group on the Phoneme Segmentation Measure

Phoneme Segmentation	Subject Number	Positive Growth Score	Negative Growth Score	Zero Growth
	1	4.1		
	2			0
	3	6.8		
	4	9		
	5	8.1		
	6	1		
	7	8		
	8	6.3		
	9	1.9		
	10			0
	11	1.4		
	12	12		
	13	24		
	14	1.8		
	15	12		
	16			0
	17			0
	18	8		
	19	46		
	20			0

## APPENDIX S

### CASE STUDIES: USE OF THE DIBELS AS A PROBLEM-SOLVING TOOL

One advantage of using a dynamic indicator measurement, such as the DIBELS is that it provides an effective and efficient process for monitoring growth in individual children. This type of monitoring is crucial given that the purpose of the DIBELS is to prevent future problems in reading acquisition. Using a problem-solving model, it is possible to target individual students who are not making appropriate gains, and to monitor the effectiveness of interventions. One way to target and monitor individual children is to use the benchmark scores identified by Good (1999) for each of the DIBELS measures. In other words, one aim of monitoring is to ensure that each child is making progress towards reaching benchmark scores by set times during the kindergarten year, therefore preparing the child for success in formal reading instruction. Children who are not making gains in reaching the benchmark scores are ideally chosen for modified instruction in pre-reading skills. According to Good, (1999) for Phoneme Segmentation, the “goal is 35 to 45 correct phonemes per minute for reading instruction to be maximally effective, and the desired time is about spring of kindergarten or fall of first grade” (pg. 2, Frequently Asked Questions about DIBELS). The benchmark for Onset Fluency is 20-25 correct onsets per minute during the winter of kindergarten. Ideally, this benchmark score would indicate that the child is ready to be monitored in the more advanced skill of phoneme segmentation. At this time, Good has not set a benchmark score for letter-identification.

This following section will examine individual children's scores across time on the Phoneme Segmentation measure as a way to highlight the usefulness of DIBELS as a monitoring tool. This study does not include classroom norms, which is a typical way to identify children who are at-risk for pre-reading readiness, however, the frequency of administrations over the intervention phase provides us with information that in a typical educational environment would help inform intervention strategies. Thus, this section will examine the scores of individual children in both the treatment and control group to illustrate how the DIBELS can be used to evaluate interventions (i.e. parent training) and monitor progress in reaching benchmark scores.

In the control group, two subjects that for the purpose of this illustration will be referred to as Alice and Jim have been selected for the Phoneme Segmentation measure. Figure 5 presents line-graphs of baseline and intervention scores for Alice and Jim. During the baseline phase, Alice received a score of zero for all ten of the Phoneme Segmentation administrations.

During the Problem-Identification phase, in which children would be pinpointed as “potentially at risk of difficulty learning to read because of low early literacy skills,” (p. 117, Kaminski & Good), Alice's scores would be evaluated using either local norms or expected performance (i.e. the benchmark score). During the next phase, Problem Validation, a decision to intervene would be based on examining the severity of Alice's scores. An educator using a problem-solving model would likely identify Alice as a candidate for intervention and subsequent monitoring, particularly because she was

assessed in the spring of her kindergarten year when the development of these skills is essential.

In this case, as a member of the control group, Alice did not receive the parent-training intervention. Data collected through the intervention phase, indicated that Alice was making gains, despite the absence of a particular intervention strategy. During the intervention phase, Alice's scores increased, with three final scores (weeks 8, 9, and 10) of 18, 17 and 18 respectively. Thus, during the intervention phase, in which Alice participated in the regular classroom curriculum, she made a gain of approximately 18 correct phonemes per minute. Despite these gains however, she did not achieve benchmark scores of 35-45 correct phonemes per minute.

The logical question from an educator's perspective is would Alice continue to make gains that would indicate the instruction she was receiving at school was appropriate, or would additional interventions be warranted? For instance, one possible intervention would be for her parents to work with her over the summer to better prepare her for reading instruction by the fall of first grade. Alice's mother did not choose to participate in the parent-training offered to parents of children in the control group during the summer. Thus, the phase Evaluating Solutions in which interventions are evaluated could not be ascertained, nor could the final phase of Problem Solution be evaluated, in which DIBELS data are used to determine if a child is still at risk and if further interventions are necessary.

The continuation of data collection would provide us with more information regarding Alice's level of risk and instructional planning. In looking at the data at the end

of the study, we can make certain assumptions that Alice is making progress, and that if she continues to make similar gains, she will not be at-risk for early reading failure.

However, if we were to evaluate Alice's data from the baseline phase, or from the first weeks of the intervention phase, it is likely that intervention would be warranted. How her scores would have been effected if she received an intervention after baseline can only be speculated, but does speak to the issue of timeliness and the question of how long do we wait before intervening? Ideally, we would want to see progressive gains in the number of correct phoneme segmentation skills. In a Problem-solving model, our data would indicate introducing an intervention before the close of the school, particularly due to the common phenomena of the regression of skills during summer vacation.

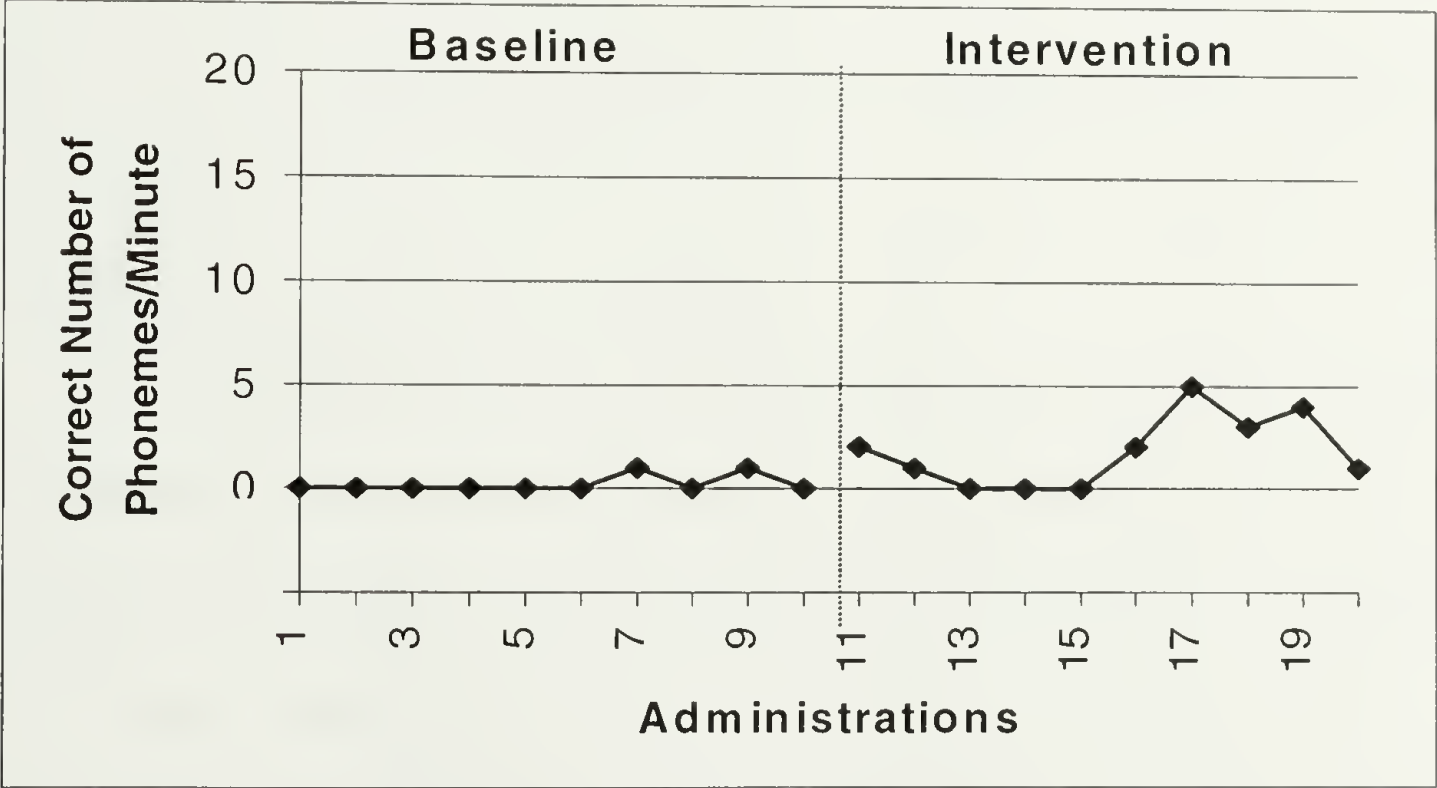
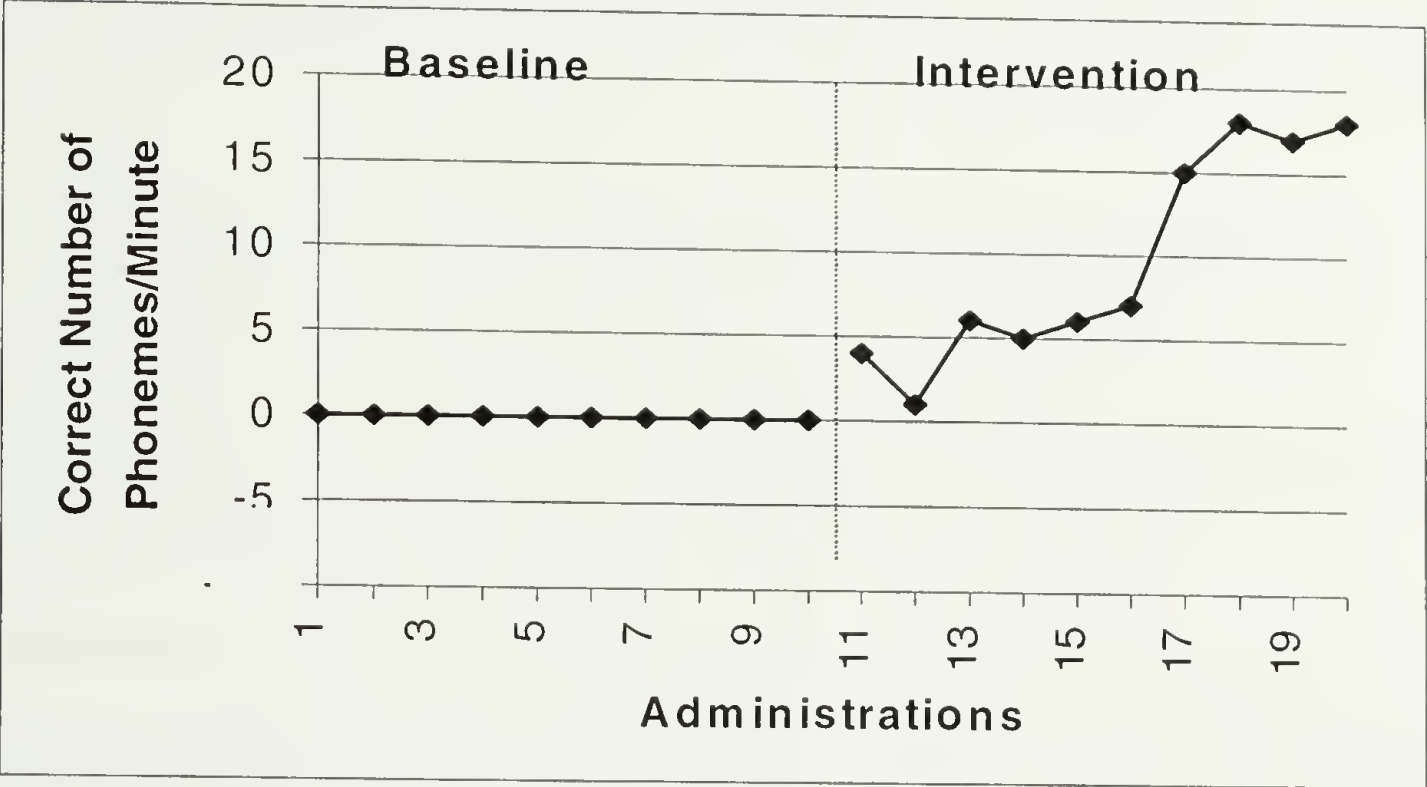
Jim's baseline data were similar to Alice's. During the ten administrations, he received scores of zero or one correct phonemes per minute. Unlike Alice, Jim made very little gains throughout the intervention phase. His highest score was five phonemes per minute, well below the benchmark of 35-45 correct phonemes per minute expected of students in the spring of their Kindergarten year.

Using a problem-solving model, Jim would be a likely candidate for receiving an intervention, since it appears that the regular classroom instruction for early literacy skills is not working. For best monitoring and intervention strategies, the data would be collected early enough in the spring semester so that an intervention could be introduced and its effectiveness monitored before the end of the school year. Certainly, an intervention such as the parent-training given to the treatment group could be started

during the school year, and if it proved an effective intervention, continued through the summer months.

Figure 5

Line-Graphs Representing Phoneme Segmentation Scores for Baseline and Intervention Phases for Two Children in the Control Group, Alice (Top) and Jim (Bottom)



Two examples from the treatment group illustrate that the parent training intervention for one child, Scott was very effective, and led to gains for another child, Lisa. The data for Lisa show however that parent-training alone might not be sufficient in ensuring that Lisa meets benchmark scores. Line-graphs of scores on Phoneme Segmentation during the baseline and intervention phase for both children are presented in Figure 6.

During the baseline phase, Scott received scores ranging from 5-9 correct phonemes/minute over the ten administrations. During the first four weeks of the intervention phase, Scott's scores increased slightly, but at that point, the intervention did not appear sufficient in helping Scott reach benchmark scores. However, his scores steadily increased after week five, the time when the phonemic skills section of the training was introduced. By the end of the intervention phase, Scott was identifying between 53 and 55 correct phonemes per minute, well above the benchmark scores. Clearly, this intervention was appropriate for Scott. His scores remained stable for the last four weeks of the intervention phase, providing a higher level of confidence in the reliability that the intervention was a success.

Lisa was unable to segment any phonemes on the Phoneme segmentation task during the baseline phase, and during the first five weeks of the intervention phase. Like Scott however, her score increased after week five, when the phoneme segmentation task was introduced to the parents. During the last five weeks of the intervention phase, Lisa's scores ranged from 9-17, an increase of 17 phonemes per minute from baseline scores. Despite the increase, a number of issues must be discussed, particularly to determine

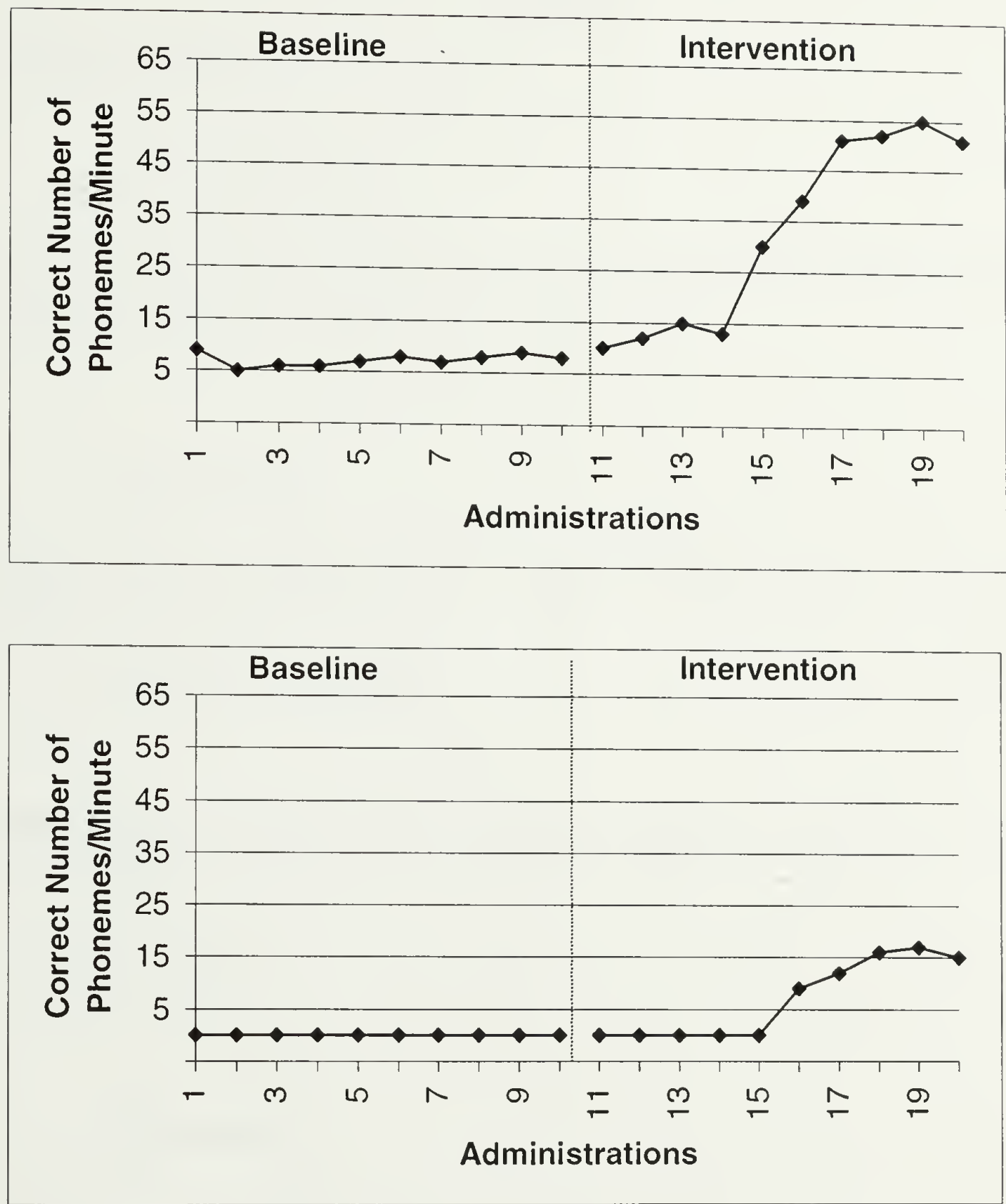
Lisa's risk-factor. Like Jim, the child in the control group, Lisa would ideally be targeted as a child at risk for early literacy skill development using a problem-solving model. Lisa's scores did increase after week five, when given the nature of the intervention, we would expect growth. However, despite the increase, she is still far below the benchmark score by the end of the intervention phase. Additional data would help with the decision to further intervene or continue with the parent training intervention. During week 10 Lisa's score decreases slightly. Further data point would thus show if this point was an aberration, or if she had reached a ceiling for phoneme segmentation. If the trend was stable in the 16-18 range, a decision to further intervene might be warranted. If the trend showed consistent improvement, a decision to continue with the parent training as the sole intervention might be warranted. The parent-training was effective for Lisa, but the question remains, was it effective enough on its own, to place Lisa in a non-risk category in early literacy skills?

An individual analysis proves to be important in the evaluation of the parent-training intervention. By analyzing individual data we can better ascertain the effectiveness of the intervention for each child, and further intervene for those children who did not make appropriate gains. This type of decision-making on a case-by-case basis is what makes the DIBELS an important assessment tool. Kaminski and Good caution that "knowing that an early literacy skills intervention is effective in general is not sufficient for a teacher working with a specific child, [and] even investigations of effective interventions have identified individual children who did not respond to the intervention, or at least who had not yet responded at the termination of the study" (p.

115). The individual children highlighted in the above case-studies emphasize the need to examine effectiveness at both a group and individual level to ensure that each child is ready to begin and succeed in formal early reading instruction.

Figure 6

Line-Graphs Representing Phoneme Segmentation Scores for Baseline And Intervention Phases for Two Children in the Treatment Group, Scott (Top) and Lisa (Bottom)



## APPENDIX T

### DIRECTIONS FOR EACH OF THE ACTIVITIES ON THE HOME ACTIVITY SHEETS \*

#### Rhyming Activities

##### Recognizing Rhyme

What to say to your child: **“I’ll say two words. You tell me if they rhyme. Does butter rhyme with milk? Tell me if these two words rhyme.”**

##### Matching Rhyme

**What to say to your child:** “We’re going to think of rhyming words. Which word rhymes with red: door, bed, path, meal?”

##### Identifying Rhyme Oddity

**What to say to your child:** “Tell me which one of the words I say does not rhyme with the other three. Night, wolf, sight, light. Which word doesn’t rhyme?”

#### Syllable Activities

##### Syllable Blending

**What to say to your child:** “Let’s put parts of a word ( or syllables) together to make words. Put these parts together to make a word. hot + ter: What’s the word?”

### Syllable Counting

**What to say to your child:** “We’re going to count syllables (or parts of words). How many syllables do you hear in cars?”

### Syllable Splitting

**What to say to your child:** “Let’s say the parts (or syllables) that go together to make a word. What parts (or syllables) are in the word ‘butter?’” (but + ter)

### Letter-Identification and Sound Activities

#### Tracing and Forming Letters

**What to say to you child:** “Let’s write a letter and trace it with our fingers. What letter is this? This is the letter ‘t’. This is a small ‘t’. Watch me trace the letter with my finger. Now you do it. What letter is this? This is also the letter ‘t’, but this is a big ‘t’. Watch me trace it with my finger. Now you do it. Let’s find 10 big or small letter ‘t’s in this poem.”

#### Hear the Sound

**What to say to your child:** “Now watch my mouth when I say the sound the letter ‘t’ makes. /t/ Can you make the sound the letter ‘t’ makes? Good Listen to the word I say and tell me if you hear the sound /t/ in the word. The /t/ sound might be anywhere in the word. Listen: ‘to’ do you hear the /t/ sound in the word ‘to’?”

#### Onset Activities

#### Matching Initial sound to word

**What to say to you child:** “I want you to think about the sounds words begin with. Does basket begin with a /b/ or a /m/?”

### Sound matching (initial)

**What to say to your child:** “Listen to the sound I say then guess which word I say begins with that sound. Which word begins with the sound /s/? basket, tree, create, stones?”

### Initial Sounds in Words

**What to say to your child:** “Listen to a word I say and tell me the first sound you hear in the word. What’s the first sound in the word valley?” (/v/).

### Phoneme Activities

#### Segmenting final sounds in words

**What to say to your child:** “Listen to the word I say and tell me the last sound you hear in the word. What’s the last sound in the word ‘lock’?” (/k/)

#### Blending sounds to form a word

**What to say to your child:** “ Let’s put sounds together to make words. Put these sounds together to make a word. /m/ /a/ /n/.” (man)

#### Identifying all sounds in words

**What to say to your child:** “Now tell me all the sounds you hear in the word I say. What sounds do you hear in the word nose?” (/n/ /long o/ /z/) (Make sure your child pauses or claps between each sound).

- Adapted from Candace Goldsworthy’s *Sourcebook of Phonological Awareness Activities: Children’s Classic Literature*, and W. Blevins’ *Phonics From A to Z: A Practical Guide*

## APPENDIX U

## TREATMENT INTEGRITY RESULTS: HOME ACTIVITY SHEETS

Home Activity Sheet	Number of Incorrect Responses	Number of Corrective Procedures Presented Like Role-Play/Script and (Corresponding Percentages)				Number of Items Comfortable with Corrective Procedure Presentation and (Corresponding Percentages)			
		Y	N	SC	NR	Y	N	SC	NR
Groups A, B and C									
1	111	102 (92)	7 (6)	0 (0)	2 (2)	99 (89)	7 (6)	0 (0)	5 (5)
2	100	77 (77)	19 (19)	0 (0)	4 (4)	82 (82)	14 (14)	4 (4)	0 (0)
Groups A and B									
3	37	30 (81)	3 (8)	3 (8)	1 (3)	29 (78)	3 (8)	3 (8)	2 (6)
4	79	65 (82)	7 (9)	5 (6)	2 (3)	69 (87)	3 (4)	2 (3)	5 (6)
5	201	136 (68)	20 (10)	7 (3)	38 (19)	142 (71)	31 (15)	6 (3)	22 (11)
6	111	93 (84)	5 (5)	8 (6)	5 (5)	100 (90)	0 (0)	8 (7)	3 (3)
7	168	139 (84)	10 (6)	10 (6)	9 (5)	144 (86)	7 (4)	10 (6)	7 (4)
8	106	84 (79)	3 (3)	14 (13)	5 (5)	82 (77)	5 (5)	14 (13)	5 (5)
9	99	69 (70)	8 (8)	17 (17)	5 (5)	73 (74)	2 (2)	17 (17)	7 (7)
10	112	84 (75)	7 (6)	17 (15)	4 (4)	84 (75)	7 (6)	17 (15)	4 (4)
Group C									
3	11	6 (55)	4 (36)	0 (0)	1 (9)	4 (36)	6 (55)	0 (0)	1 (9)
4	4	3 (75)	1 (25)	0 (0)	0 (0)	3 (75)	1 (25)	0 (0)	0 (0)

5	56	51 (91)	5 (9)	0 (0)	0 (0)	52 (93)	4 (7)	0 (0)	0 (0)
6	41	34 (83)	2 (5)	5 (12)	0 (0)	36 (88)	0 (0)	5 (12)	0 (0)
7	48	32 (67)	6 (13)	8 (17)	2 (3)	39 (81)	0 (0)	8 (17)	1 (2)
8	22	15 (68)	0 (0)	6 (27)	1 (5)	15 (68)	0 (0)	6 (27)	1 (5)
9	26	15 (57)	2 (8)	9 (35)	0 (0)	17 (65)	0 (0)	9 (35)	0 (0)
10	24	15 (63)	1 (4)	7 (29)	1 (4)	15 (63)	1 (4)	7 (29)	1 (4)

Note. Y indicates yes, N indicates no, SC indicates self-correct and NR indicates nor reply

# APPENDIX V

## PARENT RESPONSES TO EVALUATION QUESTIONS PER TRAINING SESSION

Item 1: Was the information from this training presented clearly?							
Training	Yes	Percent	Somewhat	Percent	No	Percent	Number of responses/ number of people
1. (Rhyming)	17	85%	3	15%	0	0	20/20
2. (Syllable Splitting and Blending)	13	65%	7	35%	0	0	20/20
3. (Letter-Id and Sound Correspondence )	18	90%	2	10%	0	0	20/20
4. (Onset Fluency)	19	95%	1	5%	0	0	20/20
5. (Phoneme Splitting and Blending)	20	100%	0	0	0	0	20/20
Item 2: Based on the information presented, do you feel that you learned something about _____?							
1.	12	60%	7	35%	1	5%	20/20
2.	11	55%	4	20%	5	25%	20/20
3.	12	60%	5	25%	3	15%	20/20
4.	16	80%	3	15%	1	5%	20/20
5.	18	90%	0	0	2	10%	20/20
Item 3: Did the role-plays help you learn to present the procedures to your child?							
1.	12	60%	6	30%	2	10%	20/20
2.	16	80%	3	15%	1	5%	20/20
3.	12	80%	3	20%	0	0	15/20
4.	12	80%	3	20%	0	0	15/20
5.	14	93%	1	7%	0	0	15/20
Item 4: Did the role plays help you learn how to present the corrective procedures for the Home Activity Sheets?							
1.	13	65%	7	35%	0	0	20/20
2.	16	80%	3	15%	1	5%	20/20
3.	13	87%	2	13%	0	0	15/20
4.	13	87%	2	13%	0	0	15/20

4.	13	87%	2	13%	0	0	15/20
5.	14	93%	1	7%	0	0	15/20
<b>Item 5: Did you feel comfortable to make comments or ask questions?</b>							
1.	13	65%	7	35%	0	0	20/20
2.	20	100%	0	0	0	0	20/20
3.	20	100%	0	0	0	0	20/20
4.	20	100%	0	0	0	0	20/20
5.	20	100%	0	0	0	0	20/20
<b>Item 6: After completing the training, do you feel comfortable with your role in presenting the teaching procedures to your child?</b>							
1.	20	100%	0	0	0	0	20/20
2.	19	95%	1	5%	0	0	20/20
3.	19	95%	1	5%	0	0	20/20
4.	18	90%	2	10%	0	0	20/20
5.	19	95%	1	5%	0	0	20/20
<b>Item 7: After completing the training, do you feel comfortable with your role in completing the home activity sheets?</b>							
1.	20	100%	0	0	0	0	20/20
2.	20	100%	0	0	0	0	20/20
3.	20	100%	0	0	0	0	20/20
4.	18	90%	2	10%	0	0	20/20
5.	20	100%	0	0	0	0	20/20

# APPENDIX W

## ITEMIZED RESPONSES TO PARENT SATISFACTION SURVEY

Item	Number of Strongly Agree Responses and Corresponding Percentages		Number of Agree Responses and Corresponding Percentages		Number of Neutral Responses and Corresponding Percentages		Number of Disagree Responses and Corresponding Percentages		Number of Strongly Disagree Responses and Corresponding Percentages	
Overall, I am satisfied with the training provided to me.	4	(29)	10	(71)						
Overall, I feel that I understood the concepts of phonological awareness and letter-Sound Correspondence after the training.	4	(29)	10	(71)						
Overall, I feel that the trainer presented information clearly.	4	(29)	10	(71)						
Overall, I felt comfortable asking questions during the training sessions.	8	(57)	6	(43)						
Overall, I felt comfortable asking questions during telephone check-ins.	7	(50)	7	(50)						
Overall, I thought the role-play activities helped me understand how to complete the teaching procedures.	1	(7)	9	(65)	2	(14)	2	(14)		
Overall, I thought the role-play activities helped me understand how to complete the home-activity sheets.	1	(7)	9	(65)	2	(14)	2	(14)		





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