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Phonological and Phonemic Awareness and Their Effect on Reading Acquisition

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Phonological and Phonemic Awareness and Their Effect on Reading Acquisition

by

Scott Drechsler

August 2008

A thesis submitted to the Department of Education and Human Development of the State University of New York College at Brockport in partial fulfillment of the requirements for the degree of Master of Science in Education
Phonological and Phonemic Awareness and Their Effect on Reading Acquisition

by

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CHAPTER 1

Introduction

A. Background

Research supports the relationship between phonological awareness and reading achievement in primary school children. Studies have revealed that children need to develop this awareness in order to read effectively. Hogan, Catts, and Little (2005) propose that, "Phonological awareness, when compared to many other predictors, was the most stable and robust indicator of later reading achievement" (p. 285). Systematic phonological awareness training in kindergarten and first grade positively affects initial reading and spelling.

Bonita Grossen has reviewed and utilized recent research, gathered by NICHD, (National Institute of Child Health and Human Development) to focus on identifying the nature of reading difficulties and their etiologies. The NICHD, which began in 1965, focused on reading difficulties after it became clear how extensive the reading problem was in the general population. The program has coordinated and worked closely with more than 100 researchers in medicine, psychology, and education. Grossen has evaluated prior research, and compiled information in conjunction with the NICHD's results. According to the NICHD, Grossen stated, "About 40% of the population has reading problems severe enough to hinder their enjoyment of reading. These problems are generally not developmental and do not diminish over time without appropriate interventions." (1997). According to Grossen, (1997 p. 6)
phonological awareness appeared to be the primary linguistic deficit in disabled readers. Therefore, lack of phonemic awareness is a major obstacle to reading acquisition.

Dr. Reid Lyon, National Institutes of Health, stated that reading deficits in many children can be prevented if diagnosed early and a research based intervention is implemented (as found in Wright, 2003). Denton and Hasbrouck (2000) further stated that "the success of a method of teaching reading depends on the content of the program, the way it is taught, the intensity of the instruction (how often and how actively it is taught) and the needs and strengths of the individual" (p.10).

Generally, children benefit from instruction that is systematic and structured. Therefore, reading skills should be introduced in careful order as several researchers, such as Goldsworthy (1998) have proposed. A hierarchy of skills is needed in early phonological awareness intervention, to develop a sound reading ability. Children must develop skills in order to listen, rhyme, have word awareness, syllable awareness, and then develop phonemic awareness.

The above paragraph outlines the scope and sequence of an increasing level of difficulty in phonological tasks. Although the areas are taught sequentially, they often overlap during the learning process. For example, as a child is working on phoneme substitution they continue to address rhyme production.
Developmental milestones reveal that reciting rhymes is typically acquired by age three, syllable segmentation by age four, syllable and phoneme counting by age five, matching initial consonants and dividing words by onset and rimes by age six, and blending, segmenting, and deleting phonemes in words by age seven. When children do not achieve the developmental progression of these skills within this range, deficits in reading become apparent. (Goldsworthy, 1998)

B. Statement of the Problem

Forty percent of the general population has a reading problem significant enough to hinder their enjoyment of reading. (Grossen, 1997) Why are people coming out of school with reading deficits, if they are being taught how to read? I wanted to find out the effect phonological awareness intervention had on the development of reading skills. Based on previous research, following a structured, sequential program, emphasizing the five areas of phonological awareness would facilitate the process of learning to read. I utilized a phonological awareness program in my classroom which used sound and signals collaboratively, to teach the skills necessary to become a successful reader.

C. Rationale

The topic of phonological awareness is important to me because I am a special education teacher and have taught many children with reading difficulties. Reading is very important for success in our society, yet as many as one in five students have difficulty
learning to read. Children are coming into school without the skills necessary to become successful readers. I wanted to be able to teach all children the essential phonological skills necessary to become flourishing readers.

D. Significance of the Problem

Over the past decade, there had been much evidence that indicated, deficits in phonological awareness were closely associated with difficulties in learning to read. A child that was not able to apply phonological skills to their reading would be disadvantaged throughout their school years. Much support had stated that phonological awareness is a prerequisite to the acquisition of reading skills. With 40% of the general population experiencing reading problems severe enough to hinder their enjoyment of reading, teachers must work towards schooling children in phonological awareness skills.

E. Method

Five children, aged six to nine, took part in this study. The participants took an Emergent Literacy Survey as a baseline assessment that provided a better understanding of their reading level. The survey included identification of letters and their sounds, as well as many other phonological awareness skills. Rhyming, segmenting, phonemic awareness, and blending were other abilities the survey addressed. After using a program that utilized sound and signal strategies for four weeks, along with rhyming, beginning sound, blending, and segmentation activities, the
participants took another Emergent Literacy Survey to see how much growth they made toward developing phonological and phonemic awareness skills.

F. Definition of Terms

1) Phonological awareness- A term that includes the awareness of words, sentences, rhymes, and syllables in addition to phonemes.

2) Phonemic awareness- The ability to think consciously about units of speech such as segmenting, blending, deleting and awareness of individual phonemes or sound components in a word. It also includes initial sound identification/comparison, final sound identification, phoneme counting (with and without visual aids), phoneme segmentation, and phoneme blending (synthesis).

3) Listening- The ability to attend to and distinguish both environmental and speech sounds from one another. Listening involves alertness, discrimination, memory, sequencing, and sound-symbol.

4) Rhyme- the correspondence of ending sounds of words or lines of verse. Rhyming is the ability to identify words that have identical sounds segments.

5) Letter Knowledge- Knowledge of the letter names and sounds

6) Word awareness- The knowledge that sentences consist of words and that these words can be manipulated. Word awareness includes pointing to individual words and counting the number of words.
7) Syllable awareness - The ability to hear parts or segments of phonemes that comprise the rhyme of the word. Syllable awareness includes counting, segmenting, blending, and deletion of syllables.

8) Segment - The ability to say the individual sounds (phonemes) in a word.
Chapter 2

Literature Review

The relationship between phonological awareness and early literacy development has been well established for many years. Phonological awareness is an awareness in sounds that is revealed by abilities such as, to notice and connect sounds, recognize sounds, recognize rhyme, and hear syllables. These skills are difficult for children to master, because not all spoken words have identifiable parts. For example the word dog consists of one physical speech sound. In alphabetic languages, however, letters usually represent phonemes, and to learn the link between letters and phonemes, the child has to be aware of phonemes in words (Ehri, 2005).

Evidence for the importance of phonological awareness comes from many sources. Hawk, McDonnell and Johnston have researched emerging literacy views and practices and concluded, the likelihood that a poor reader in first grade will continue to be a poor reader in fourth grade is almost 90 percent. This poor performance in reading is shown to continue through high school, because 75% of students identified with reading disabilities in third grade continue to have reading disabilities in ninth grade (2005). It has been shown that children, who learn to read using a phonological approach, perform better than children who learn by non-phonics methods. Also, measures of phonological awareness predict achievement in beginning reading more accurately than many tests of
school achievement, including IQ scores, age, and measures of socio-economic status (Metsala 1999).

People communicate by putting sounds together into words, phrases and sentences. Children learn oral communication easily and interactively within their homes and community. By listening to others around them speak, children gain knowledge of how sounds are put together to form words, but when encountering written language, children must realize that the visible signs represent words and then realize that words are made up of separate sounds (Pinnell and Fountas, 2003).

For a child to be able to distinguish sounds in words and sentences, they must have developed sound awareness. This occurs as early as 28 weeks after conception. Researchers have detected fetal eye responses to loud noises using ultrasound technology (Bauman-Waengler 2004). Using loudspeakers close to the mothers’ abdomens, doctors presented the syllables [babi] or [biba] to mothers in their last trimester. There were changes in the heart rate of almost all the fetuses when the stimulation changed from [babi] to [biba], thus showing how early children develop sound awareness. Also within the first couple of days after birth, infants displayed a preference for their mothers’ voice and change sucking rate to hear her voice more often than another female’s voice (Bauman-Waengler 2004).

Language development begins with the babbling stage, transitions to first words, and culminates with a complete phonological system (Bauman-Waengler 2004). Over many years
researchers (e.g., Templin, 1957, Prather, Hedrick, and Kern, 1975) have tried to determine approximate progression of phonological development. They have tried to develop approximate ages of individual mastery in specific groups of children. Investigators have come to the conclusion that mastery remains an individual process and they can only identify general trends children progress through in stages of language development (Goldsworthy 1998).

The babbling stage of phonological development is an important stage, as it is emerging as a predictor of later language ability (Bauman-Waengler 2004). This stage includes many different intonations in voice levels.

The transition to first words is also known as the linguistic phase. This phase begins at the moment a child utters their first word. An example of a child uttering their first word would be when a child is shown a ball and he/she mumbles the sound "ba." This is sufficient for their first sound because it resembles the adult word ball (Bauman-Waengler 2004). A child's phonological development at this early stage still demonstrates a limited supply of awareness. Bauman and Waengler state, "Perception seems to somewhat precede production. But, by the end of the preschool period, around the child's fifth birthday, an almost complete phonological system has emerged" (p. 105).
Early Identification

Children's reading abilities are tested early and predictions are made based on these assessments. The results are shown to be relatively stable over time in predicting the likelihood that a poor reader in first grade will continue to be a poor reader in fourth grade.

Since this poor reading trajectory continues through high school, focus needs to be on preventing reading deficits as oppose to improving reading outcomes for children. Prevention should begin at birth and continue to age five. This is when infants, toddlers and preschoolers are learning critical emerging literacy skills for reading success. Children are entering kindergarten without the skills necessary to respond to early reading instruction, particularly children from low-income backgrounds (Hawken, et al., 2005).

Children from poverty stricken backgrounds are more likely to experience reading difficulties because they are less likely to have positive interaction with a caregiver or parent to enhance language and early literacy skill development such as print awareness, letter recognition, and sound structure of language (Hawken, et al., 2005).

After conducting a survey of 274 Head Start teachers, Hawken, Johnston, and McDonnell (2005) synthesized their results. The results showed that teachers focused on five domains; book knowledge, print awareness, phonological awareness, alphabet knowledge, and early writing. To improve alphabet knowledge, nearly
98% of teachers encouraged children to play with alphabet letters/puzzles at least 1-2 times per week. Also 33% of teachers had children make letter collages (cut and paste pictures that start with the letter "B" (Hawken, et al., 2005).

According to Hawken, Johnston, and McDonnell, teachers used strategies to improve phonological awareness abilities. Almost 50% of the teachers practiced identifying initial consonant sounds in words (e.g., "f" in fish) on a daily basis. Also, about 40% of the teachers used rhythm games practicing sounds in words and read nursery rhymes to the children daily. In addition, 24% of the Head Start teachers identified syllable units in words (e.g., Fri-day) on a daily basis with another 28% percent practicing this phonological skill 1-2 times per week. Lastly, about 40% of the teachers practice blending sounds together to form words (e.g., "c-a-t" = cat) at least 1-2 times per week.

The domain that received the least amount of focus from Head Start teachers was phonological awareness. "Research evidence has clearly indicated that if children are to be on track for reading, acquiring phonological awareness skills is essential to overall reading success" (Hawken, et al., p. 239). The study suggested that preschool teachers in the Head Start Program may feel it is more appropriate to focus on rhyming and alliteration activities, than on blending and segmenting. This supports the finding that although Head Start teachers implement phonological awareness strategies,
they were implemented less frequently than other emerging literacy activities such as shared book reading.

The National Institute of Child Health and Human Development (NICHD) educational research program focused on phonological awareness and reading difficulties as it became clear how extensive the problem was in the general population (Grossen 1997). This research is a source of major implications for early reading instruction. According to the NICHD there are seven key principles of effective reading instruction:

1) Begin teaching phonemic awareness directly at an early age (kindergarten)

   Phonemic awareness can be taught with listening and oral reproduction tasks. Teachers should begin phonemic awareness instruction before they introduce sound spelling relationships. Every child in school is ready for some instruction in phonemic awareness. Phonemic and other important reading strategies are learned and do not develop naturally (Grossen 1997). Some estimates suggest that approximately 90 percent of students identified as having learning disabilities lack phonemic awareness (Cooper, Chard, Kiger 2006).

2) Teach each sound-spelling correspondence explicitly.

   Cooper, Chard, and Kiger believe to become literate, a child must grasp the alphabetic principle, which means that the sounds we hear in words in English can be represented by written symbols
Teachers must explicitly teach each sound/letter combination (Grossen 1997).

3) Teach frequent, highly regular sound-spelling relationships systematically.

There are 40-50 sound spelling relationships children need in order to read a majority of words. Some examples of the sound spelling relationships most often used are m, t, s, r, ch-as in chip, sh-as in shop and the "th" sound Grossen 1997). Providing multisensory perceptual awareness of targeted consonant and short vowel sounds enhance a child’s phonological awareness skills (Caputo-Schwartz 1997).

4) Show children exactly how to sound out words.

After the children have learned two to three sound spelling correspondences, the teacher instructs the students how to move sequentially from left to right saying the sound for each spelling. Students should orally produce each sound in a word and sustain that sound as they progress to the next. Then the students must be taught to put those sounds together to make a whole word. Students sound out the letter-sound correspondences in their head and then produce the whole word. Each step should be modeled and practiced (Chard, Coyne, Edwards, Good, Harn, Kame‘enui, Simmons 2008).

5) Use connected, decodable text for children to practice the sound spelling relationships they learn.

Decodable text is composed of words that use the sound spelling correspondences that children have learned to that point and limited
number of sight words that have been taught. Only decodable texts provide the children an opportunity to apply the sound spelling relationships they have learned (Grossen 1997).

Segmenting and Blending

Specific phonological tasks such as phonemic segmentation and blending are strong predictors of beginning reading ability and these skills are also necessary prerequisites for success in learning to read (Oudeans 2003). Oudeans completed a study in which she examined two methods of integrating and teaching letter-sound correspondences and phonological blending and segmenting. The purpose of the study was to determine which sequences of integrating alphabetic skills and phonological awareness best facilitated word reading performance in kindergarten children with low phonological awareness skills (2003).

Kindergarten children were selected from five classrooms based on the results from an individually administered, standardized test, given to identify nonreaders in each of these classes. Only nonreading kindergarteners were chosen to participate in this intervention because research suggested that children with low phonological awareness in kindergarten could be at risk for future reading disabilities.

There were two instructional groups in which the children were placed. One approach teaches phonological awareness and letter sound correspondence in the same training session but as separate
activities. The phonological awareness activities of blending and segmenting are taught within the same training session but separately (Oudeans 2003).

The other approach refers to a sequence in which two sets of activities are taught within the same training session. They are linked with each other to establish connection between print and speech. This helps children understand that the letters in words are systematically represented by sounds (Chard et al. 2008).

Oudeans concluded that both approaches to teaching phonological awareness were "equally effective in teaching children the letter names and sounds in isolation" (p.277). This may be because both instructional methods provided strategies for teaching letter naming and letter sound identification. The connection to print may not have been necessary for children to show gains in fluent letter naming and letter sound production.

The results of Oudean’s study show "an instructional sequence that systematically and explicitly links letter-sound correspondences and phonological blending and segmenting cannot be overemphasized" (279). A child’s ability to segment and blend sounds that make up words is critical to becoming a proficient reader.

Letter Knowledge

Letter knowledge and letter naming abilities are also strong predictors of phonological awareness success, and measures of letter
knowledge might be as strong a predictor of literacy development as phoneme awareness (Gillon 2005). Letter knowledge has been found to be significantly correlated with reading in numerous studies (Blaiklock 2004; Gillon 2005). Knowledge of the letter names and sounds helps young children understand that words are not whole units but are made up of patterns of letters (Blaiklock 2004). This skill of letter knowledge and letter naming helps to build and recall words in memory, and also to decode unfamiliar words. In addition, studies have shown (Stahl, Murray 1994; Christensen 1997) that a certain amount of letter knowledge is needed before children can show some types of phonological awareness (Blaiklock 2004).

Blaiklock uses additional evidence supporting the link between letter knowledge and phonological awareness in studies of adult illiteracy. Knowledge of letter names and sounds assists young children to see that words are not whole units but made up of patterns of letters. This knowledge helps children establish and recall words in memory, and decode unfamiliar words (2004). Studies have made connections between adults who are illiterate and adults who have recently learned to read. Blaiklock states, "These studies indicate that rhyme and syllable awareness may develop prior to learning to read, but awareness of phonemes requires experience of reading in an alphabetic language" (p.39).

There have been many studies that have not taken into account the influence of letter knowledge when evaluating the effects of intervention. These studies reveal, phonological awareness training
without the involvement of letters does not produce significant benefits for reading (Blaiklock 2004).

In the spectrum of letter awareness, the skill of letter naming speed is present. Schatschneider, Carlson, Francis, Foorman, and Fletcher (2002) state, "It has been shown that deficits in naming speed and phonological awareness are additive and will produce more severe reading difficulties when they co-occur with the same child; this has been termed a double deficit" (p.245). Naming speed or the ability to rapidly name letters has consistently predicted reading success. In addition, poor naming speed represents a better predictor of reading difficulty.

Schatschneider, et. al., proposed the following three types of reading impairments: phonological deficit, rate deficit, and double deficit. Phonological deficit represents a poor phonological awareness and an intact naming speed. The students’ phonological awareness skills such as, blend onset and rhyme, blend phonemes into words and nonwords, compare first sounds in words, and segment individual phonemes were poor. The students’ ability to rapidly name lower case letters would be average (2002).

Rate deficit consists of a naming speed deficit and intact phonological awareness. The student struggles with rapidly naming lower case letters and is average in phonological awareness skills.

Lastly a double deficit is both rate and phonological deficits together. Phonological awareness skills and letter naming skills are below average or the students are struggling in both areas. The
results of their study suggest naming speed and phonological awareness are both predictors of word recognition skills. Also children with only phonological awareness deficits are less likely to have severe impairments on phonological awareness than children with deficits in both phonological awareness and naming speed. Schatschnieder et. al., conclude that low naming speed scores produce severe deficits in early reading (2002).

Reading Disability and its Effect on Early Reading Development

The National Institute of Child Health and Human Development (NICHD) research has focused on identifying the nature of reading problems and their causes (Grossen 1997). Researchers identified unique variances in brain scans of individuals with reading problems. These brain scans reflect an inability to work with phonemes. Children who are not phonemically aware are not able to segment words and syllables into phonemes. Hence forth, they do not develop the ability to decode words accurately and fluently. This inability is the distinguishing trait of persons with reading disabilities.

Reading is not developmental and does not come naturally. Treatment intervention research has shown that appropriate early direct instruction seems to be the best medicine for reading problems because it is a learned skill (Grossen 1997). Reading difficulties reflect a constant deficit rather than a pause in basic reading skills. Children, who fall behind early, are much more
likely to stay struggling throughout their educational career. Adults with reading problems show the same characteristics that are exhibited by children with reading difficulties (Grossen 1997).

Early reading development is contingent on children acquiring the skills and strategies necessary to become a reader. The best predictor of future reading difficulty in grade three is performance measures of phonemic awareness. These skills include, rapid naming of letters, numbers and objects, and print awareness. Phonemic awareness, or the ability to segment words into syllables and syllables into sound units or phonemes, is the main deficit when reading disabilities are diagnosed. Lack of phonemic awareness is a major obstacle in learning to read with about forty percent of children having some level of difficulty with phonemic awareness. For another twenty percent, phonemic awareness does not develop or improve over time (Grossen 1997). Reading disabilities in phonological awareness have proven to be a cause of reading deficits. Explicit instruction in phonemic awareness combined with sound-spelling correspondences is very powerful in improving reading skills (Grossen 1997).

A large amount of evidence has accumulated indicating that deficits in phonological awareness are closely related with difficulties in learning to read. Phonemic awareness is one of the most reliable predictors of early reading achievement, and instruction in phonemic awareness skills has a positive impact on reading achievement. Phonemic awareness skills are causally related
to reading acquisition (Metsala 1999). Phonological awareness is an essential prerequisite and can facilitate the later acquisition of reading and skills.
Chapter 3
Applications and Evaluation

Introduction

The members of the target intervention group for this study were students from the Rochester City School District. The students' ages ranged from six to nine years old. The purpose of this study was to find out if a structured, sequential program, emphasizing the five areas of phonological awareness would facilitate the process of learning to read. I also wanted to find out the anticipated effect phonological awareness intervention had on the development of reading skills.

Participants

This thesis study included five students: three kindergarten students, age five, one second grade student, age seven, and a third grade student, age nine. The second and third grade students were classified as students with mental retardation, and had an Individual Education Plan (IEP). Parental permission was gained for each participant (see Appendix A). There were approximately 350 students in the school with a ninety-four percent attendance rate. The poverty rate in this school was seventy percent, with seventy-four percent of students from racial minorities. Fifteen percent of the school population had individual education plans (IEP). For my intervention, forty percent of the students had IEP's.
Procedures of Interventions

The target intervention group met in fourteen, thirty minute sessions over four weeks for a total of seven hours (see Appendix B). The pre and post assessments/summaries forms, (see Appendix C) were not included in this time frame because I wanted ample time for focusing on intervention strategies during the sessions.

With permission from Carol Caputo-Schwarz, (see Appendix D) sessions one through four focused on the "Ear"ie Sounds Story. Session one was used to tell the "Ear"ie Sounds Story (see Appendix E). I used paper/popsicle stick characters and a doll house to assist in telling the story while the students echoed the sounds and signals they heard.

Session two was used to introduce the first keyboard (see Appendix F). The students learned that all the sounds in the story were on the keyboard in chronological order starting in the top left corner, continuing across and down to the next row. We made a connection to reading a book in the same manner. Each student was given a gummy bear to move from character to character while saying and signaling the sound.

Session three and four focused on practicing the first keyboard and retelling the "Ear"ie Sounds story using a velcro house much like that of Jose's, the main character in the story. Each student was given a plastic bag that contained a laminated piece of paper
with the front and back yard of Jose's house (see Appendix G). The bag also contained the eighteen consonant sounds/characters from the story. As I retold the story, the students were responsible for placing the consonant sound/character on the correct spot on the house, with assistance from each other.

Sessions five and six started with a review of a new keyboard (see Appendix H). As new keyboards were introduced, the keyboards evolved, and the pictures on each became more obscure, and more emphasis was put on the letter/s in each box (see Appendices I, J, K).

In these sessions, compound words were introduced to the students, and they practiced the segmenting and blending of disyllabic and multi-syllabic compound words. A compound word was introduced as two parts, when put together become one whole. One activity the students were guided through was showing them two pictures, one of mail, and the other of a box. We decided that each picture was a word by itself. I asked, "Is mail a word?" The students would reply yes. "Is box a word?" The students would reply yes. When we put these pictures together, they formed a new word, "mailbox."

We also practiced the deletion of one part of a compound word. "Say mailbox, but don't say mail." The students were able to say the part of the compound word that was not deleted.

Sessions seven, eight and nine focused on beginning sound activities. Each activity focused on a set of four beginning
sounds. Session seven and eight focused on the sounds B, C, D, and F, and session nine focused on the initial sounds of L, M, N, and P.

In each of these sessions, the students opened and utilized a manila folder containing an activity that involved the specific letters named above. The students were each given four to five picture cards with the corresponding word written at the bottom. For example, one picture card would have a picture of a door on it and the word "door" on the bottom. Each student was given cards with one word from each initial sound we were practicing. Each student would have a word beginning with B, C, D, and F. I would then say a word, and they would look through their cards for a word that has the same beginning sound. For example, "Show me a word that begins with the same sound as 'dog.'" We would go around the table and share the words/pictures cards that began with the same sound while placing them on the correct part of the file folder (see Appendix L).

Session ten began with the introduction of a new keyboard (see Appendix I). In sessions ten, eleven and twelve we practiced the keyboards (see Appendices J and K) individually and out loud. Some students shared how they could identify all eighteen consonant sounds and their signals by reading through the keyboard independently.

A majority of time in these sessions was spent introducing blending onset and rhyming words. Rhyming words were introduced as, words that sound the same at the end. We did an activity with the
word family "am." The students cut out a picture of a jar of jam with the letters "am" on the bottom. Then, they cut out a narrow rectangular piece of paper which had the initial consonant sounds of "j", "r", "h", and "cl" (see Appendix M). We slid the paper through the bottom of the jar of jam and practiced blending the onset with the rhyme.

I modeled, by saying, "Jah-am, jam, er-am, ram, ha-am, ham, and cl-am clam." Then, we went over each onset and rhyme one at a time, with each student practicing it, and connecting it to our "Ear"ie Sounds story by signaling.

Session thirteen focused on phoneme segmentation. The students were given three gummy bears and a paper with three boxes across the top. I would say three sounds with a consonant, vowel, consonant (CVC) pattern word, and the students would move each gummy bear as they put the word together. For example, I would say, "kah, ah, tah." The students would then repeat what I said moving a gummy bear for each individual sound, blending the sounds together to make a word. We would practice this several times with different words.

Session fourteen involved a review of concepts taught throughout the intervention focusing on the students' favorite games or activities.

**Instruments of Evaluation**

The instrument of evaluation was an identical survey administered at the beginning and end of the program (see Appendix
N). This instrument was reprinted from the Emergent Literacy Survey, Levels K-2 in HOUGHTON MIFFLIN READING: A LEGACY OF LITERACY by J. David Cooper and John J. Pikulski, (c)2001, with permission from Regina R. Green, Senior Rights and Contract Editor (see Appendix O). The students were administered an Emergent Literacy Survey as a baseline assessment that provided a better understanding of their reading level. The survey included identification of letters and their sounds, as well as many other phonological awareness skills. Beginning sounds, rhyming, blending onsets and rhymes, phoneme blending, and phoneme segmentation were phonological and phonemic skills the survey addressed.

The second instrument of evaluation was a Phonological/Phonemic Awareness Exit Interview the students completed at the culmination of the intervention (Appendix N). The purpose of the exit interview was to obtain information from the participants about the activities involved in the intervention, and to also gauge how they felt when the intervention ended. The exit interview consisted of four questions. I administered the exit interview individually after the Emergent Literacy Survey. I read the questions aloud and the students circled their choice on the paper.

**Statistical Procedures for Program Evaluation**

Each part of the Emergent Literacy Survey was scored separately. Capital letter identification was scored out of twenty six possible correct answers and letter/sound correlation was also
out of twenty six, totaling fifty two. Lower case letter identification was scored out of twenty six and lowercase letter/sound correlation was also out of twenty six making a total of fifty two. The total for both capital and lowercase letter/sound identification was one hundred and four. Higher letter naming scores showed learned letter knowledge and higher sound/letter correlation scores showed learned sound awareness.

The following five subtests were broken into five possible points each; beginning sounds, rhyme, blending onset and rimes, phoneme blending, and phoneme segmentation. Each subtest was scored as, total correct out of five. Higher scores, out of five, would show learned phonemic awareness skills.

Word recognition and sentence dictation were other subtests on the Emergent Literacy Survey, but were not used because the intervention did not address those areas.

The phonological/phonemic awareness exit interview was administered informally on an individual basis. The questions addressed how the participants felt about different aspects of the intervention as a whole. The students answered one question by circling their favorite choice and three others by circling yes or no.

Results of the data collected appear in the next chapter.
Chapter 4

Results

At the conclusion of the thesis study, participants completed an identical Emergent Literacy Survey (see Appendix I) as a cumulative assessment to provide a better understanding of their phonemic and phonological awareness growth. The survey addressed the following phonological and phonemic areas: identification of letters and their corresponding sounds, initial sounds in words, rhyming, blending onsets and rhymes, and phoneme blending and segmentation. In addition, the students completed an exit interview (see Appendix N).

The results of the assessments are below.

Letter/Sound Identification

Students were asked to identify twenty-six upper case letters on one page and twenty-six lowercase letters on a separate page. Each student was provided an index card with a window cut out in the middle to use as a marker to track each letter. The student was instructed on how to use the card so he/she would not lose his/her place. The following verbal instructions were given to the student: "You are going to tell me the name of each letter and its sound." I placed the window of the index card on the first letter and asked, "What is this letter?" waited for the response, and then asked "What sound does it make?" This procedure was followed for all fifty-two letters assessed. A point was awarded for each correct response (one point for the letter, one point for the sound). There was a
total of one hundred four possible points on this subtest. The higher the score out of the total indicated more developed letter/sound identification skills. The participants’ results from the pre-survey and post-survey subtest letter sound identification, are listed on the table below.

Table 1

**Letter Sound Identification**

<table>
<thead>
<tr>
<th>Participant</th>
<th>Pre-assessment</th>
<th>Post-Assessment</th>
<th>Percent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6/104</td>
<td>8/104</td>
<td>33%</td>
</tr>
<tr>
<td>B</td>
<td>30/104</td>
<td>62/104</td>
<td>107%</td>
</tr>
<tr>
<td>C</td>
<td>57/104</td>
<td>73/104</td>
<td>28%</td>
</tr>
<tr>
<td>D</td>
<td>96/104</td>
<td>103/104</td>
<td>7%</td>
</tr>
<tr>
<td>E</td>
<td>78/104</td>
<td>91/104</td>
<td>17%</td>
</tr>
<tr>
<td>Mean Score</td>
<td>53/104</td>
<td>67/104</td>
<td>26%</td>
</tr>
</tbody>
</table>

All five participants’ scores increased from the pre-survey to the post-survey. There was a seven percent to one hundred seven percent range of improvement, with a mean percent increase of twenty-six for all five participants.

**Beginning Sounds**

The Beginning Sounds subtest was comprised of five assessment items. The following verbal instructions were given to the student: "Words can begin with the same sound. Listen to these words: boy, ball, balloon. All these words begin with the same sound /b/ (//,
indicates saying the sound for the letter). Boy, ball, balloon, /b/.

"Now we are going to practice. Tell me a word that begins with the
same sound as ride, /r/." If the student did not respond correctly
he/she was told, "Ride begins with /r/, like in read, red, and rose.
Let's practice one more." The same format was followed for each of
the five assessment items. The student received one point for
each correct response for a total of five possible points. The five
assessment words were; sink /s/, pie /p/, more /m/, donkey /d/, and
lion /l/.

The participants' results from the pre-survey and post-survey
subtest Beginning Sounds, are totaled in Table 2 below.

| Table 2 |
|-------------------------|-----------------|-----------------|-----------------|
| Beginning Sounds        | Participant     | Pre-assessment  | Post-assessment | Percent Increase|
| A                       | 0/5             | 1/5             |                 | 100%            |
| B                       | 1/5             | 1/5             |                 | 0%              |
| C                       | 0/5             | 5/5             |                 | 500%            |
| D                       | 4/5             | 5/5             |                 | 25%             |
| E                       | 0/5             | 4/5             |                 | 400%            |
| Mean Score              | 1/5             | 3.2/5           |                 | 220%            |

Based on the results of the assessment, four out of five
participants improved in the area of beginning sounds. Participant
D's score increased by twenty five percent, and participant A's
scores increased one hundred percent from the pre-assessment to the
post-assessment. Participant E increased four hundred percent, and
participant C increased five hundred percent from the pre to post assessment. Participant B's pre and post assessment score remained the same, giving him/her a zero percent change. The pre-assessment mean score was 1/5 and the post assessment score was a 3.2/5 which is an average increase of two hundred twenty percent.

Rhyme

The next subtest was rhyme. I started this subtest by giving the following verbal instructions, "When words rhyme, they sound the same at the end. For example, fun, and sun rhyme. I'm going to say a word, and I want you to give me a word that rhymes with my word." "Now we are going to practice. Listen to this word- dig. Tell me a word that rhymes with dig." If the student did not respond correctly, he/she was told, "Pig rhymes with dig, big, and fig also rhyme with dig. Let's practice one more." Each assessment item was administered in the same manner. The assessment words the students were asked to find rhymes with were: bat, head, fan, got, and rug. One point was awarded for each correct response for a total of five. The results of the rhyme subtest are listed in Table 3 on the next page.
Table 3

Rhyme

<table>
<thead>
<tr>
<th>Participant</th>
<th>Pre-assessment</th>
<th>Post-assessment</th>
<th>Percent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0/5</td>
<td>3/5</td>
<td>300%</td>
</tr>
<tr>
<td>B</td>
<td>0/5</td>
<td>3/5</td>
<td>300%</td>
</tr>
<tr>
<td>C</td>
<td>0/5</td>
<td>4/5</td>
<td>400%</td>
</tr>
<tr>
<td>D</td>
<td>0/5</td>
<td>2/5</td>
<td>200%</td>
</tr>
<tr>
<td>E</td>
<td>4/5</td>
<td>5/5</td>
<td>25%</td>
</tr>
<tr>
<td>Mean Score</td>
<td>0.8/5</td>
<td>3.4/5</td>
<td>325%</td>
</tr>
</tbody>
</table>

All of the participants' scores increased by at least twenty-five percent, with Participant C having the highest increase of four hundred percent. Participant E's rhyming scores increased by twenty-five percent. Participant D's rhyming scores increased by two hundred percent and participants A and B increased their scores by three hundred percent. The average increase in Rhyme score was three hundred twenty-five percent.

Blending Onset and Rimes

The third subtest administered was blending onsets and rimes. In this subtest the following verbal instructions were given: "Sometimes you can add a sound to the beginning of a word and make a new word. If I have the word at, and I add the /s/ sound at the beginning of at, I make the word sat: /s/at, sat. Let's try a practice word. What word do I have if I add the /p/ sound at the beginning of __ink? /p/ __ink?" If the participant did not say the
word pink, then I said, "When I combine the sound /p/ and word ink, I make the word pink." The participant received one possible point for each correct response. The five assessment items were as follows: /m/ an, /f/ all, /t/ able, /b/ ill, and /r/ at, giving each participant a possible five points. The results of the blending onset and rhyme are listed in Table 4 below.

Table 4

<table>
<thead>
<tr>
<th>Participant</th>
<th>Pre-assessment</th>
<th>Post-assessment</th>
<th>Percent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0/5</td>
<td>0/5</td>
<td>0%</td>
</tr>
<tr>
<td>B</td>
<td>0/5</td>
<td>2/5</td>
<td>200%</td>
</tr>
<tr>
<td>C</td>
<td>0/5</td>
<td>3/5</td>
<td>300%</td>
</tr>
<tr>
<td>*D</td>
<td>5/5</td>
<td>5/5</td>
<td>0%</td>
</tr>
<tr>
<td>E</td>
<td>0/5</td>
<td>4/5</td>
<td>400%</td>
</tr>
<tr>
<td>Mean Score</td>
<td>0/5</td>
<td>1.8/5</td>
<td>180%</td>
</tr>
</tbody>
</table>

*Participant D's score was not used in the average increase of all participants because it was a perfect pre-test and post-test which would show an increase of zero percent.

Participants B, C, and E's scores increased by at least two hundred percent, while participant A's score did not increase. Participant B increased by two hundred percent, participant C increased by three hundred percent, and participant E increased by four hundred percent. Participant D scored a perfect score on the pre-test and on the post-test which reflects a zero percent increase and was not tallied in overall percent increase. The average increase in score for all five participants was one hundred eighty percent.
Phoneme Blending

The Phoneme Blending subtest was comprised of five assessment items. The following verbal instructions were given to the student: "Words are made by putting sounds together. I am going to say the sounds and I want you to tell me what word they make. For example, /s/ /a/ /t/ makes the word sat. "Now we are going to practice. /b/ /e/ /d/ What word would I have if I put together the sounds /b/ /e/ /d/?" If the participant responded incorrectly to the practice items I said, "/b/ /e/ /d/, that word is bed." Each assessment item was administered in an identical manner as the practice item. The five assessment items were: /t/ /a/ /p/ (tap), /m/ /e/ /n/ (men), /j/ /o/ /g/ (jog), /k/ /u/ /t/ (cut), and /l/ /i/ /d/ (lid). One point was awarded for each correct response with a total of five possible points. The participants' results from the pre-survey and post-survey subtest Phoneme Blending, are totaled below in Table 5, along with the percent increase.

Table 5

Phoneme Blending

<table>
<thead>
<tr>
<th>Participant</th>
<th>Pre-assessment</th>
<th>Post-assessment</th>
<th>Percent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0/5</td>
<td>2/5</td>
<td>200%</td>
</tr>
<tr>
<td>B</td>
<td>0/5</td>
<td>1/5</td>
<td>100%</td>
</tr>
<tr>
<td>C</td>
<td>0/5</td>
<td>2/5</td>
<td>200%</td>
</tr>
<tr>
<td>D</td>
<td>2/5</td>
<td>4/5</td>
<td>100%</td>
</tr>
<tr>
<td>E</td>
<td>3/5</td>
<td>5/5</td>
<td>67%</td>
</tr>
<tr>
<td>Mean Score</td>
<td>1/5</td>
<td>2.8/5</td>
<td>180%</td>
</tr>
</tbody>
</table>
According to Table 5, all participants increased their scores from the pre-assessment to the post-assessment by at least sixty-seven percent. Participants B, and D increased their scores by one hundred percent and participants A, and C increased their scores by two hundred percent. Overall, the average increase in phoneme blending skills is one hundred eighty percent.

Phoneme Segmentation

The Phoneme Segmentation subtest was comprised of five assessment items. The following verbal instructions were given to the student: "I will say a word and I want you to tell me the sounds that are in the word. For example, if I said, sat, you would say /s/ /a/ /t/. Now we are going to practice. What are the sounds in mud? Think about the first sound, the next sound, and the last sound." If the participant responded incorrectly to the practice item I said, "The sounds in the word mud are /m/ /u/ /d/." Each assessment item was administered in an identical manner as the practice item. The five assessment items were pat (/p/ /a/ /t/), leg (/l/ /e/ /g/), sip (/s/ /i/ /p/), tub (/t/ /u/ /b/), and rock (/r/ /o/ /k/). The participants' results from the pre-survey and post-survey subtest Phoneme Segmentation, are totaled in Table 6 on the next page, along with the percent increase.
Table 6

Phoneme Segmentation

<table>
<thead>
<tr>
<th>Participant</th>
<th>Pre-assessment</th>
<th>Post-assessment</th>
<th>Percent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0/5</td>
<td>0/5</td>
<td>0%</td>
</tr>
<tr>
<td>B</td>
<td>0/5</td>
<td>0/5</td>
<td>0%</td>
</tr>
<tr>
<td>C</td>
<td>0/5</td>
<td>0/5</td>
<td>0%</td>
</tr>
<tr>
<td>D</td>
<td>4/5</td>
<td>5/5</td>
<td>25%</td>
</tr>
<tr>
<td>E</td>
<td>1/5</td>
<td>4/5</td>
<td>300%</td>
</tr>
<tr>
<td>Mean Score</td>
<td>1/5</td>
<td>1.8/5</td>
<td>80%</td>
</tr>
</tbody>
</table>

Two out of five participants increased their scores. Participant D increased his/her score by twenty percent and participant E increased his/her score by sixty percent. Participants A, B, and C did not increase their score. The average percent increase was sixteen percent.

Phonological/Phonemic Awareness Exit Interview

The Phonological/Phonemic Awareness Exit Interview consisted of four questions (Appendix N). The first question addressed which activity the participants enjoyed the most. The second question asked if having a hand signal/gesture helped him/her remember consonant sounds. The third question asked if the participant would like to continue using the "Ear"ie Sounds keyboards to assist in reading and writing in their own classroom, and question four asked if the participants felt as though they have become a better reader.
because of the intervention? The results of the exit interview are found in Table 7 below.

Table 7

Phonological/Phonemic Awareness Exit Interview

<table>
<thead>
<tr>
<th>Activity</th>
<th>Did having a hand signal/gesture help you remember consonant sounds?</th>
<th>Would you like to continue using the “Ear”ie Sounds keyboards to assist you in reading and writing in your classroom?</th>
<th>Do you feel as though you have become a better reader because of the intervention?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Beginning Sounds File Folders</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>1 Student</td>
<td>4 Students</td>
<td>5 Students</td>
<td>5 Students</td>
</tr>
<tr>
<td>b) “Ear”ie Sounds Story</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4 Students</td>
<td>1 Student</td>
<td>0 Students</td>
<td>0 Students</td>
</tr>
<tr>
<td>c) Word Family/Rhyming Activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 Students</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to the exit interview, four students enjoyed listening to the “Ear”ie Sounds story and doing related activities most. One student liked the beginning sounds file folder activities, and zero students liked the word family/rhyming activity the most. When asked if having a hand signal/gesture helped participants remember consonant sounds; four students said yes it helped, and one student said no, it did not help. According to table 7, all five students would like to continue using the “Ear”ie Sounds keyboards in the classroom to assist in other reading and writing tasks. Table 7 also shows that all five participants believed they have become a better reader because of taking part in the intervention.
Conclusions and Recommendations

The purpose of this study was to provide a structured, sequential, phonological awareness intervention program, emphasizing the five areas of phonological awareness. I wanted to find out the anticipated effect phonological/phonemic awareness intervention had on the development of reading skills. I investigated to find out: if providing early phonological/phonemic awareness intervention would result in higher phonological/phonemic awareness skills at the end of the intervention. I also wanted to assess students' attitudes about themselves and the intervention, upon conclusion. By analyzing the results from the pre and post assessment and exit interviews, I have drawn conclusions about the effectiveness of this type of early phonological/phonemic awareness intervention.

After analyzing the data, it was apparent that early phonological/phonemic awareness intervention created a positive effect on the reading skills of all the participants of the group. Overall, positive results were noted through participants' increased letter sound identification, beginning sound skills, rhyming skills, blending onset and rhyme, phoneme blending, and phoneme segmentation skills, validating research that early direct instruction seems to be the best solution for reading deficits.

When examining the data, I found that all participants increased their letter knowledge by at least seven percent. On average the participants increased their overall letter knowledge by
twenty-six percent. I believe the growth is due to practicing and reinforcing letter names and sounds in each session through use of the keyboards. Also, according to the exit interview, all five students would like to continue using the keyboards in their classroom to assist in reading and writing showing that they enjoyed using them, and also that they noticed how the keyboards helped them. I also noticed as I administered the post test to the participants, that all participants recalled signals from the keyboard, and modeled many of them as they gave the sounds for the letters.

Current research has shown that a certain amount of letter knowledge is necessary before children can show some type of phonological awareness growth, and this growth is evident in the other four subtests on the survey- beginning sounds, rhyme, blending onset and rhyme, and phoneme segmentation. On average, all participants increased their scores from the pre-test to the post test by at least one hundred eighty percent. This is a large increase across the board.

The second and third subtests were beginning sounds and rhyme. Beginning sounds subtest scores, on average increased by two hundred twenty percent, and rhyme subtest scores, on average increased by three hundred twenty-five percent. These are significant increases in scores from pre to post assessment. I believe the participants increased their scores in beginning sounds because the children
enjoyed the activities during the session, and according to the exit interview, one student thought it was his favorite activity.

The rhyme subtest average percent increase was three hundred twenty-five percent. This is a higher percent increase than the beginning sounds subtest, and is a bit surprising because the Emergent Literacy Survey is given with this subtest after the beginning sounds subtest. I originally thought the highest percent increase for all participants would be on the first subtest and each subtest thereafter would decrease. I thought literacy skills were arranged on the survey, in order of difficulty, but the participants did noticeably better on the second subtest.

I can conclude that the children did better on rhyming because so much work is done in the classroom at an early age surrounding nursery rhymes. Seeing such an increase was not expected. But in contrast, research states that mastery of certain skills remains an individual process and experts can only identify a general trend in development, and some skills may develop faster than others.

The average percent increase in scores for the next two subtests- blending onset and rhyme, and phoneme blending- from pre to post test increased on average of one hundred eighty percent, but that is a drop when compared to the beginning sounds and rhyme subtests. This shows the participants are still improving but not by as much a percentage. We worked on the skill of word families and blending onset and rhyme for three sessions, and this seemed to contribute to the growth of most participants. One participant did
not increase her score and I can deduce that it could be due to attendance and time constraints. After looking back on attendance records, the participant who did not increase score, missed one of the sessions involving word families. We met for a total of fourteen sessions for only thirty minutes and missing one could contribute to a lower percent increase to her score.

The last subtest, phoneme segmentation, had an average increase of eighty percent which was the lowest average percent increase for all participants. I believe this was also due to time constraints. A large percentage of the intervention sessions focused on letter knowledge, beginning sounds, word families, and introducing new keyboards, so only one session was used to focus on breaking words apart into individual sounds or phoneme segmentation. Participants may not have had enough time to learn the skill. Plus, phoneme segmentation is a more advanced skill to learn and master. Research says that a certain amount of letter knowledge is needed before children can show this type of phonological awareness and maybe these participants had not developed a satisfactory sense of letter knowledge.

In conclusion, results of this thesis study along with current research, supported implementation of early intervention strategies to promote phonological/phonemic awareness. Knowing that a child who exhibits reading difficulties, and does not receive appropriate early direct instruction with phonological/phonemic awareness skills is more likely to exhibit the same reading difficulties as an adult.
I found that early intervention, like the one introduced in this study, made a positive impact on developing readers.

Although the pre and post test scores on all subtests increased on average by at least twenty-six percent for all participants, there are recommendations to be considered when completing further interventions. For example, I would increase the amount of time for each session to sixty minutes. This would increase time devoted to each phonological/phonemic awareness skill and provide more time to practice using the learned skill in a controlled setting. I would also increase the length of the intervention as a whole. Fourteen sessions were not enough time to introduce and practice necessary skills to develop phonological/phonemic awareness and to enable students to become readers.

Along with the above changes, a system must be developed and implemented to monitor absenteeism. When a participant was absent from a session, his/her post-test scores were not as valid as participants who attended every session. With an absenteeism system, a participant might not complete any post-test assessment used to measure that session's developmental task. With such system in place, the data from the post-test would be more accurate and valid.

Reading is a learned skill, and children that fall behind early, are much more likely to stay struggling throughout their educational career. Hence forth, I believe that early reading intervention and direct instruction of phonological/phonemic
awareness skills are the best solution for combating reading deficits. As I began researching and working on intervention strategies, I wanted to help students develop the necessary phonological/phonemic awareness skills to become better readers. I feel as though I have been successful with this and I have strengthened my beliefs that early direct instruction is crucial to becoming a better reader.
References


Appendix A: Parental Permission Letter

February 26, 2008

Dear Parent/Guardian of ________________________,

I would like to invite your child to participate in an intervention study to assist him/her in developing basic phonemic and phonological awareness skills necessary for reading. He/she will hear a story entitled, “Ear”ie Sounds,” which incorporates eighteen targeted consonant sounds and five short vowel sounds that will enhance your child’s phonological awareness skills. They will also learn beginning sounds, rhyming, blending onsets and rimes, phoneme blending and phoneme segmentation skills. I will be conducting this intervention as part of my master’s thesis work at SUNY Brockport.

If you give permission for your child to participate in the intervention, he/she will be doing various activities with rhyming, beginning sounds, blending sounds together, and segmenting words, with the goal to increase their phonological awareness.

Participation in this intervention will take place over four weeks. We will meet in a group for thirty minutes 4-5 times a week focusing on different phonological and phonemic awareness skills.

Participation in this study is voluntary. Your child’s identity will be kept confidential and no names will be used. Your child may refuse to participate or withdraw at anytime without penalty. If there is anything about this intervention or your child’s participation that is unclear or that you do not understand you may contact me at 288-8008 ext. 1080. Thank you.

Sincerely,

Mr. Drechsler

---------------------------------------------------------------

Child’s name: ___________________________ Date ______

I have read and understand this form
☐ My child has my permission to participate.
☐ My child does not have my permission to participate.

I understand that I have the right to review the curriculum and all material used and that I have the right to revoke permission without notice at any time.

Parent/Guardian name (printed) ___________________________

Parent/Guardian name signature ___________________________
Appendix B: Plan of Intervention

Plan of Intervention beginning February 25-

Week one:
- Tell "Ear"ie Sounds story
- Introduce keyboards with corresponding sounds and signals
- Practice using keyboards
- Introduce beginning sounds (folder activities)

Week Two:
- New Keyboard
- Introduce rhyming (Bingo)
- Word families (writing words together)

Week Three/Week Four
- New Keyboard
- Blending onsets and rhymes
- Phoneme Blending (Patterns for Success activities)-manipulating letters to create words
- Phoneme Segmentation (breaking words apart into each individual sound using letters the students can manipulate)

The level of the group will drive what activities will be done and the duration or length of time covering it.
# Pre/Post Emergent Literacy Survey Summary Form

## EMERGENT LITERACY SURVEY

### Summary Form

<table>
<thead>
<tr>
<th>Child’s Name</th>
<th>Examiner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child’s Date of Birth</td>
<td></td>
</tr>
</tbody>
</table>

### Phonemic Awareness

<table>
<thead>
<tr>
<th>Area Assessed</th>
<th>Beg. Year Date</th>
<th>Midyear Date</th>
<th>End of Year Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning Sounds</td>
<td>IS</td>
<td>IS</td>
<td>75</td>
</tr>
<tr>
<td>Rhyme</td>
<td>IS</td>
<td>IS</td>
<td>75</td>
</tr>
<tr>
<td>Blending Onsets and Rimes</td>
<td>IS</td>
<td>IS</td>
<td>75</td>
</tr>
<tr>
<td>Phoneme Blending</td>
<td>IS</td>
<td>IS</td>
<td>75</td>
</tr>
<tr>
<td>Phoneme Segmentation</td>
<td>IS</td>
<td>IS</td>
<td>75</td>
</tr>
</tbody>
</table>

**Criterion Score:** 4/5

### Familiarity With Print

| Letter/Sound Identification | 7108 | 7108 | 7108 |

**Criterion Score:** 86/108

### Beginning Reading & Writing

| Word Recognition | 730 | 730 | 730 |

**Criterion Score:** 24/30

### Sentence Dictation

| 767 | 767 | 767 |

**Criterion Score:** 54/67

### Comments

---

*Master 10 Summary Form*
**LETTER/SOUND IDENTIFICATION SCORE SHEET**

✓ Check each box if the student knows letter and sound of letter.

<table>
<thead>
<tr>
<th>Name: ___________________________</th>
<th>Date: ________________</th>
<th>Recorder: ___________________________</th>
<th>Date of Birth: ________________</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>LETTER/SOUND IDENTIFICATION SCORE SHEET</th>
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**Letters Unknown:**

**Consonants:**

**Long Vowels:**

**Short Vowels:**

**Comments:**

**TOTAL/ Beg. Of Ye. Score:** $52 + 56 = \frac{108}{108}$

**TOTAL/ Mid Year Score:** $52 + 56 = \frac{108}{108}$

**TOTAL/ End of Ye. Score:** $52 + 56 = \frac{108}{108}$

Record Totals on Master 10 Summary Form

Criterion Score: 86 out of 108 correct.

*Letter/Sound*

---

BL-59 (5/11/01)  
Page 32
### Appendix C: Pre/Post Emergent Literacy Survey Summary Form (continued)

**EMERGENT LITERACY SURVEY**

**Phonemic Awareness (ELS)**

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#### Beginning Sounds

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<td>4. /d/ onkey</td>
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<td>S /l/ lion</td>
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**Total Correct:**

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#### Blending Onsets and Rimes

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<tr>
<td>3. /a/ able — table</td>
<td>3. /j//o//g/ (jog)</td>
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<tr>
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<td>5. /l//i//d/ (lid)</td>
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**Total Correct:**

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#### Phoneme Segmentation

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<td>3. sip/s/i//p/</td>
<td>Record Totals On Master 10 Summary Form</td>
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<tr>
<td>4. tub t /u//b/</td>
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<tr>
<td>5. rock r /r//k/</td>
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**Total Correct:** /5

**Criterion score:** 4 out of 5 correct.
**Word Recognition**

**Scoring** One point is awarded for each word that is correctly identified.

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<td>14. are</td>
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<td>29. hop</td>
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<td>15. as</td>
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<td>30. mud</td>
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**Criterion Score:** 24 out of 30 correct.

**Record Totals on Master 10 Summary Form.**
Appendix D: “Ear”ie Sounds Permission Letter

You replied on 2/26/2008 1:06 PM.

Drechsler, Scott

From: CaputoSchwarz, Carol
To: Drechsler, Scott
Cc: CaputoSchwarz, Carol
Subject: RE: “Ear”ie Sounds
Attachments:

Absolutely! Let me know if you need anything! We miss you!

Carol A. Caputo-Schwarz, M.A.C.C.C.
Speech Language Pathologist

----Original Message-----
From: Drechsler, Scott
Sent: Monday, February 25, 2008 4:55 PM
To: CaputoSchwarz, Carol
Subject: "Ear"ie Sounds

Hello there Carol,

I wanted to send you an email asking for your permission to use your “Ear”ie Sounds story for part of my intervention to complete my thesis for SUNY Brockport? I know what you thinking, isn’t he done with that yet? Nope, not yet, but I will be done by this summer. Thank you so much.

Scott

PS: Give everyone my best at Scool #8.

Early one morning as Jose and his cat Muffy were sleeping soundly in their bed on the second floor of their home; they were awakened by the sound of a rooster on the red roof. "R-R-R-R-R-R", (simultaneously demonstrate the manual sign for the /r/ phoneme/ hand signal #1) he happily sang as he announced the arrival of Halloween. "R-R-R-R-R-R". (resume demonstration of the /r/ phoneme). Do you see that the tips of my two fingers (coated with red nail polish) are crossed and painted red, and look just like the red cockscomb of the rooster? (identify on figurine). Jose and Muffy opened their eyes widely to that happy sound (demonstrate hand signal #2 at eye level), sat up in their bed, s-t-r-e-t-c-h-e-d (extend duration of voice) their arms above their heads, and heaved a big sigh (elicit an audible exhalation and pantomime sequence.) Jose looked at Muffy with excitement and said, "Good morning, Muffy!" I'm so happy because today it's Halloween! After work, I'm going to drive to the fruit farm and buy a big, round, orange pumpkin (extend arms outwardly into a circular shape) that will greet all of our trick-or-treaters tonight!" Then, he eagerly jumped out of bed and began to get dressed. He pulled his pants up over his knees and his shirt down around his chest (gesture with total body response). He walked downstairs (utilize index and middle fingers to gesture the action on a surface) with Muffy behind him. In the kitchen he prepared a nutritious breakfast. He ate a bowl of cereal, drank a glass of orange juice and when he finished, brushed his teeth in the bathroom (pantomime the sequence). As he opened the door to leave for work, he turned to Muffy and said," Remember, I may be coming home a little late because I am going to go to the fruit farm to buy the biggest, roundest, orangest pumpkin (extend arms outwardly into a circular shape) to help us celebrate Halloween!" He closed the door behind him, and walked to the garage that was located behind his house. He opened the garage door (open mouth to eliminate place confusion with the /ml phoneme). He hopped onto his new motorcycle, and turned the key to start the engine (gesture action). The motor of the engine sounded like this "N-N-N-N" (place hand on throat to indicate voicing, and state to the children," You have a motor in your garage, too! Doesn't it sound like the engine of the motorcycle?) "N-N-N-N" (simultaneously place index finger of right hand on your nose, and index finger of left hand horizontally under the nose to tactiley identify the air stream, hand signal #3). As Jose sped away, only a trail of warm smoke from the muffler of his motorcycle was left behind him (identify associated part on motorcycle). Do you feel the
warm stream of air flowing from your nose? (resume demonstration of the /n/ phoneme simultaneously with hand signal #3). It feels just like the stream of warm smoke from Jose's motorcycle! After work, Jose remembered to drive to the fruit farm and there he bought the biggest, roundest, orangest pumpkin that he could find (extend arms into circular shape). He placed it on the back seat of his motorcycle and quickly drove home. Muffy greeted him at the door, and began to purr (initiate oral-motor vocalization to demonstrate the animal sound) when she saw the pumpkin. Jose said, "Let's carve this big, round, orange pumpkin into a happy jack-o-lantern (present altered pumpkin)." When they were finished, they placed a large candle inside the jack-o-lantern and placed it outside on the porch. As he lit the candle in the center of the pumpkin (demonstrate striking a match), Jose said, "We must be sure that the trick-or-treaters have lots of light so they can safely climb up the steps to our porch to collect their treats." It was beginning to get dark (present full moon and twinkling stars in sky), and Jose was glad that the jack-o-lantern would glow brightly for his visitors. As he walked back inside his house and closed the door behind him, he began to sneeze. His sneezing sound sounded like this, "Achoo, achoo, achoo!" (pantomime action with hand signal #4). He sneezed so hard that the walls of the house began to shake and tremble as if they were going to fall down! (place hands on cheeks to tactiley identify the affrication of the /ch/ phoneme "My goodness," he said to Muffy, "I'm either catching a cold or this house needs to be dusted." He swept his hand across the dining room table (gesture "across" by sweeping right hand across midline, hand signal #5), looked at the gray dust that collected on his hand (demonstrate with right hand), and said, "yuk!" (flail index and middle fingers from fisted right hand away from face to demonstrate the construction of the /y/ phoneme, hand signal #6). I think I should dust the furniture and vacuum the carpets before all our guests arrive." He opened the closet door, and took out the vacuum cleaner. He turned it on, and began to vacuum. "V-V-V-V" its motor roared (place left hand on neck to feel vibration, and create the letter V with index and middle fingers of right hand to symbolize the handle of the machine, hand signal #6. Sweep hand and arm vertically to represent the action of the vacuum). "V-V-V-V" the motor hummed as Jose vacuumed under tables (demonstrate), behind chairs (demonstrate), and into the corners of the rooms (demonstrate). After he was finished, he took a deep breath (generate a deep inhalation) and was so excited that the
house smelled fresh and clean. He looked at Muffy and said, "I'm very tired (yawn) so before Halloween night begins, I'm going to go upstairs to take a nap. I think it's going to be a long busy night!" So, with Muffy following closely behind, Jose climbed up the stairs to his bedroom. He climbed into bed and pulled the blanket under his chin (demonstrate action). As he began to fall asleep, with Muffy resting at the foot of his bed, the only sound that could be heard throughout (extend pointer finger of right hand, and sweep horizontally across midline from left to right to demonstrate concept, hand signal #7) the house was the old grandfather clock ticking in the hallway. "Tick tock, tick tock, tick tock", the hour hand sounded (lift index finger, and rhythmically sweep back and forth to the word pattern)."Tsk, tsk, tsk, tsk, tsk, tsk, tsk" (initiate oral-motor vocalization in conjunction with index finger sweep) the clock sounded as the seconds quickly passed. Jose began to quietly fall asleep, and as he did, the sleeping/snoring sound that he made was a long one that sounded like this "SSSSSSSSSS" (snort proceeded by a prolonged "SSSSSSSSSS" and accompanied by the right hand sweeping down the entire length of the left arm to reinforce stridency, hand signal #8). Just as Jose was beginning to have his favorite dream, he was awakened by the creaking sound of the front door opening and closing, opening and closing (demonstrate with door). He quickly sat up in his bed, and quivering with fear (shake body) looked at Muffy and whispered "SH! (demonstrate request for silence, hand signal #9). Muffy, we need to go downstairs and find that sound!" He climbed out of his bed, and quietly but quickly tiptoed down the stairs with Muffy closely behind him (pantomime action). When he reached the front door, he could hear the wind whirling the fall leaves outside on the steps. The wind sounded like this," W-W-W-W" (wiggle three fingers of right hand horizontally across midline of body, hand signal #10). It was quiet but powerful. As he opened the door (increase rate and loudness of voice), a gust of wind quickly blew out the candle that was lit inside the pumpkin with a powerful "Puff (gesture with fingers flaring out from a closed fist position to demonstrate the production of the /p/ phoneme, hand signal, #11). Jose was frightened by the darkness outside of the house, and after looking left and then right (demonstrate) for more curious sounds or creatures, he decided he'd better go back inside the house. Just as he turned around, his eyes (demonstrate focus sign) found a shadow (place a shadow of a ghost on the steps) on the steps. He looked above the door.
Appendix E: “Fair”ie Sounds Story (continued)

(gaze upwards) to see whose shadow it belonged to, and who might be resting there
but a friendly ghost who loudly shouted "B-B-B-Boo!" (hand signal #12 with left
hand on throat to indicate voicing of the /b/ phoneme). Jose quickly slammed the
doors shut, (clap hands forcefully to indicate action) and ran upstairs with Muffy
following closely behind him. He jumped into his bed, and this time he didn’t pull
the blanket under his chin (gesture). He pulled the blanket over his head
(gesture). Why do you think that he pulled the blankets over his head? Still
shivering with fear, he once more tried to fall asleep. Again, the only sound he
heard was the grandfather clock ticking in the hallway as the seconds
quickly passed: tick tock, tick tock, tsk, tsk, tsk, tsk, tsk, tsk (repeat previous
finger and oral-motor movements).

Just as Jose was about to fall asleep, he was interrupted (demonstrate manual sign
for interrupting) a second time (raise two fingers). This time the sound was not
coming from the front of the house, it was not coming from the side of the house,
and it was not coming from behind the house (identify, by pointing, each locale on
the dollhouse). Jose s-t-r-e-t-c-h-e-d his sense of hearing (cup hand to ear), and
heard a quiet tapping sound on the rooftop of his house. The sound sounded like
this "T-T-T-T-T-T-T" (tap thumb and index finger together and rhythmically combine
with production of the /t/ phoneme, hand signal #13). Jose quickly sat up in bed, once
again turned to Muffy and quietly said, "SH!" (demonstrate request for silence, hand
signal #9). We need to check this sound out, too!" They quietly tiptoed down the
stairs (demonstrate action), flipped on a switch to turn on the night light outside
(lift index finger vertically upwards to indicate lingual elevation of the /I/ phoneme,
hand signal #14, and exaggerate the production of the /I/ phoneme), walked outdoors
and lifted a long ladder that was laying beside the left side of the house
(demonstrate the manual sign for the /I/ phoneme to represent the rise of the ladder
beside the house, as well as to reinforce the lingual lift to the alveolar ridge, hand signal
#15). As Jose quietly climbed the rungs of the ladder with Muffy following closely
behind him, a gentle rain began to fall (rub hands together to represent rain). When
they reached the rooftop, what did they see (demonstrate focus sign, hand signal
#18) but a pair of black crows quietly building nests of twigs, mud, sticks and
stones! What they heard (cup hand to ear) was the tapping of the sticks, stones,
and twigs as they built their nests with their beaks. "T-T-T-T-T-T-T" (repeat hand
signal #13 with simultaneous
Appendix E: "Ear"ie Sounds Story (continued)

production of the /t/ phoneme). their beaks sounded. Jose was angry for having his nap interrupted (gesture manual sign for interrupting, hand signal #16) a second time, stamped his foot (demonstrate action), and angrily said, "What are you doing on my roof?" The birds quivered, (shake your body) and with teardrops falling from their eyes, they sadly said, "Mr. Jose, we're sorry that we've woken you! We heard thunder (demonstrate manual sign to denote /Listen/, hand signal #17), and saw lightening in the sky (demonstrate manual sign for /l/ phoneme, and place fingers on either side of nose, pointing upwards toward eyes to request a focus, hand signal #18), and knew that a storm was coming soon. We're trying to build a nest, a home for our babies, so they'll feel safe and warm." Jose suddenly became very sad (point to corners of your mouth while frowning) that he had lost his temper so quickly. He took a moment to regroup (demonstrate re-grouping sign, hand signal #19), and quietly said, "Please forgive me! I became angry without having enough information. You may build your nests tonight, and you may also work as long and as noisily as you need to in order to finish your important job!"

"Thank you, Mr. Jose!" the crows said before they returned to their work. As Jose and Muffy climbed down the ladder, they left behind the sound of the birds noisily tapping their beaks to finish the homes for their babies. The noisy tapping sounded like this, "D-D-D-D-D-D" (hand signal #13 with left hand on throat to indicate voicing). They were working so hard! "Hew!" (wipe brow) Jose said to Muffy on their way back into the house. "I'm sure happy that was only a group of birds preparing a home for their babies on our roof. They're right! The sky is beginning to look cloudy and dark, and look (demonstrate focus sign, hand signal #18) at that lightening in the sky. Let's try to get a little more sleep before Halloween night begins."

They walked back into the house, climbed the stairs to the bedroom, climbed into bed, pulled the blankets under his chin, and began to fall asleep. "SSSSS" (snort followed by a prolonged /s/ phoneme and accompanied by hand signal #8) "SSSSS" his sleeping/snoring sound quietly said. Again, the only sound they heard was the grandfather clock ticking away the hours that would bring Halloween night upon them. "Tick tock, tick tock, tick tock, tsk, tsk, tsk, tsk, tsk, tsk, tsk, tsk" (resume finger sweep and oral motor vocalization).

As Jose and Muffy fell into a deep deep sleep (resume sleeping/snoring sound and hand signal #8), they were suddenly awakened by a third sound
(lift three fingers to demonstrate concept). The sound was not coming from the front of the house, it was not coming from the side of the house, and it was not coming from the rooftop (re-identify locales by pointing). This time, the sound was made at the back window, and it sounded like this "K-K-K-K-K-K-K" (simultaneously initiate scraping action with right hand on top of left hand to demonstrate production of the /k/ phoneme, hand signal #20). Muffy was so angry that her nap had been interrupted (demonstrate manual sign for interrupting, hand signal #16) three times (raise three fingers), that she quickly jumped off the foot of the bed first, ran down the stairs and through the house to the back window in the kitchen. She pulled the curtains apart (demonstrate action), and who do you think she found? Bruno, the family dog, was begging for a bone by scraping a single paw alongside the house! "K-K-K-K-K-K-K" (simultaneously initiate production with hand signal #20). He wanted a Halloween treat, too! Muffy was so disturbed by his begging that she hissed at Bruno with her most furious cat sound, "F-F-F" (simultaneously initiate /f/ phoneme with right hand upright and fingers curled into a clawed position, hand signal #21). Bruno became angrier and angrier! He was even more determined to have his treat so his scraper sound became louder and louder as he used both paws to let Muffy know that he wanted a bone NOW! "G-G-G-G-GR-GR" (hand signal #20 with left hand on throat to indicate voicing) he growled. Jose had finally followed Muffy into the kitchen, and after hearing (cup hand to ear) Muffy's furious hissing (posture for hand signal #21) sound and Bruno's noisy scraper sound (hand signal #20 with left hand on throat to indicate voicing), he decided that he had better act quickly, and give that dog what he wanted. "We don't want him to frighten our visitors later this evening," he said to Muffy. He reached under the kitchen sink and found the biggest bone in the bag that he could find. He picked it up, opened the back window, and pitched the bone to Bruno through the window, (pantomime sequence). Bruno quickly placed it between his teeth, and with what sounded like a whimper of thanks to Jose, carried it to his doghouse in the backyard. They then watched him eagerly begin to chew his special Halloween treat (demonstrate an oral motor rotary chew).

As Jose was closing the window, he gazed up and saw a full moon slowly move behind dark clouds in the sky (present objects). He thought he heard (cup hand to ear) an owl hooting, "hoot, hoot, hoot" and a fox howling, "howl, howl, howl" (request that the children count the number of words
in the sequence) from the woods behind the house. He turned to Muffy and said, "I guess they're greeting the arrival of Halloween night." It sure looks and sounds spooky out there! Let's place another candle inside the pumpkin that's outside on the porch so that the trick-or-treaters won't trip on the steps on their way up to the front door." (pantomime the lighting of a candle). Just as they had finished lighting the candle, many trick-or-treaters began to arrive at the door. Muffy and Jose were surprised to see all the children dressed in so many different costumes. A group of children were dressed as dinosaurs (present various types of dinosaurs), a few were dressed as jungle animals, (present various types of jungle animals), and a couple looked like a prince and princess. They were followed by several that were dressed as witches and goblins and jack-o-lanterns. There was even a single child who looked exactly like Muffy's twin! (present remaining costumed pictures) Jose and Muffy had a lot of fun looking at the costumes and putting candy into the children's' bags. The children were so polite, too! They patiently waited their turn as Jose passed out the candy to each of them, and always remembered to say "thank you!" As Jose reached to put some candy in a Halloween bag, his arm suddenly felt wet. "Drip drop, drip drop, drip drop", the rain pitter-pattered (rhythmically snap fingers on alternating hands to reinforce the word pattern). "It looks like the rain that the birds predicted would arrive has finally begun to fall! I'm glad that the crows had enough time to finish building their nests on the roof!" Jose said to Muffy.

In the distance, they began to softly hear a couple of children cheerfully singing a song. It sounded like this:

The Goblin in the Dark
words by Agnes Webster, 1959

The goblin in the dark
The goblin in the dark.
Hi ho on Halloween
The goblin in the dark. (Sing song to the tune of The Farmer in the Dell, exaggerate-
The goblin takes a witch, ate the production of the
The witch takes a bat phonemes underlined and simul-
The bat takes the ghostaneously demonstrate the asso-
And the ghost says "Boo!" ciative manual signs.)

Copyright 1957 by Carol A. Caputo-Schwarz M.A., CCC/slp, Speech-Language Pathologist
Appendix E: "Favor Sounds Story (continued)

The goblin in the dark The goblin
in the dark Hi ho on Hallowe'en The
goblin in the dark.

As they became closer to Jose's house, their singing became louder and louder. Jose greeted the two children and noticed that the little boy named Harry who was dressed as a horse and carrying a Hallowe'en bag with a haunted house drawn on it, was huffing and puffing. His panting sounded like this, "H-H-H-H-H-H-H-H" (place hand on chest and pant repetitively, hand signal #22). "Why are you huffing and puffing??" asked Jose. "I'm running out of breath", said the little boy, because we're in a hurry to get home before the rainstorm, and my bag is heavy with treats" (exaggerate the heave of the /h/ phoneme). Jose quickly placed a treat in his bag, and then looked at the little girl. She was dressed as Minnie Mouse and carried a Hallowe'en bag that had a half moon drawn on it. Her shoes were so muddy from walking through the puddles of rain (emphasize productions underlined to acoustically reinforce targeted phonemes)! Jose quickly placed a treat in her bag and then gave them both a second treat because they were so determined to complete their trick or treating before the weather would no longer cooperate with them. They remembered their manners, and thanked Jose before hurrying home. As they quickly walked down the street, Jose saw (demonstrate focus sign) the little girl open a box of M and M's, put a handful in her mouth (pantomime sequence), and say "mmm. These M and M's are yummy!" (rub stomach circularly to indicate pleasure, hand signal #23) as the chocolate melted in her mouth. Jose smiled and Muffy purred as they watched the children walk home. Then, Jose picked Muffy up in his arms and said, "This was certainly the most unusual Hallowe'en I've ever had! I think we can finally get a good night's sleep. We'll probably dream of all the adventures that we had tonight!" Muffy answered Jose with a purr (initiate oral-motor vocalization), and together, they quietly walked upstairs.

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Appendix F: "Ear"ie Sounds Keyboard One

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![Diagram of keyboard with images of animals and objects corresponding to the letters and sounds.](image-url)
Appendix G: Jose House (continued)
Appendix H: "Ear"ie Sounds Keyboard Two

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Appendix I: "Ear"ie Sounds Keyboard Three

- g - h - c -
- t - l - f - n -
- u - w - w - y -
- m - d - k - p -
- b - y -

- r -
Appendix J: "Ear"ie Sounds Keyboard Four
Appendix K: "Ear"ie Sounds Keyboard Five

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[Image of hand gestures for each letter]
Appendix L: Beginning Sounds Manila Folder Activity (continued)

- carrot
- baby
- door
- car
- camera
- computer
- cookie
- ball
- fence
- duck
- dinosaur
- feet
- button
- desk
- leather
- bike
- fish
- bone
- doll
Appendix M: Word Family "am"
Please answer the following questions:

1) Which activity did you enjoy the most during the intervention?
   a) Beginning Sounds File Folders
   b) "Ear"ie Sounds Story
   c) Word Family/Rhyming Activity

2) Did having a hand signal/gesture help you remember consonant sounds?
   YES   NO

3) Would you like to continue using the "Ear"ie Sounds keyboards to assist you in reading and writing in your classroom?
   YES   NO

4) Do you feel as though you have become a better reader because of the intervention?
   YES   NO