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Promoting Phonological Awareness in Young Children through At-Home Activities: A Video Curriculum

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ABSTRACT

PROMOTING PHONOLOGICAL AWARENESS IN YOUNG CHILDREN

THROUGH AT-HOME ACTIVITIES: A VIDEO CURRICULUM

by

Kathleen A. Kwak

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Research relating phonological awareness, beginning reading acquisition, and parental involvement in children's literacy development was read, evaluated, and summarized. A positive relationship between phonological awareness and learning to read was indicated from this review, and a correlation between parental literacy activities and children's language and reading acquisition was found. Studies suggesting the existence of a developmental sequence of phonological skills were examined. The literature review provided a rationale and design for phonological awareness instruction. A research supported curriculum containing a teacher's manual, take-home interactive video activities and activity sheets, and assessments was created.

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CHAPTER 1

Focus of the Project

In order to become fully functional in modern society, a person must possess the ability to read (Ekwall & Shanker, 1989), yet 25-40 percent of children do not read well enough to succeed in school (Snow, 1998). Of those children, only a few (perhaps 2-4 percent) have difficulties that stem from intractable intellectual or neurological malfunctions (Lyon, 1997; Pearson, 1998). Most are children who are not responding well to instruction. Reading difficulties do not diminish over time (Bruck, 1992; The Center for the Future of Teaching & Learning, 1998; Kozol, 1985), and without serious and specific interventions, the knowledge gap between struggling readers and those who learn to read early will increase (Juel, 1998; Stanovich, 1986). Difficulties in learning to read have been shown to have negative consequences, both throughout the school years and into adulthood (Juel, 1988; Juel, Griffith, & Gough, 1986; Snow, 1998; Stanovich, 1986; Torgesen, Wagner, & Rashotte, 1994). Based on these reports, it is crucial that reading problems be addressed as early as possible, before children experience failure (Snow, 1998).

The process of learning to read is a process of decoding and comprehending, and it requires the application of many competencies. While difficulties in any of these capacities can impede reading development, phonological processing appears to be the primary ability where children with reading difficulties differ from other children (The Center for the Future of Teaching & Learning, 1998). The Center (1998) reports that phonological awareness, one of the major phonological processing skills, appears to be the most

prevalent linguistic deficit in disabled readers. This claim is corroborated by a growing body of evidence that suggests phonological awareness to be a crucial skill for the acquisition of reading (Ball & Blachman, 1991; Calfee, Lindamood, & Lindamood, 1973; Stanovich, 1986; Stanovich, 1994; Torgesen, Morgan, & Davis, 1992; Tornéus, 1984).

Phonological awareness is also highly correlated to future reading achievement in later school years (Alegria, Pignot, & Morais, 1982; Juel, 1988; MacDonald & Cornwall, 1995; Share, Jorm, Maclean & Matthews, 1984; Stanovich, Cunningham, & Cramer, 1984; Torgesen, Wagner, & Rashotte, 1994; Treiman & Baron, 1983; Tunmer & Nesdale, 1985). Other research indicates that deficits in phonological awareness predict reading difficulties and have a negative affect on reading acquisition. (Bradley & Bryant, 1983; Juel, 1988; Torgesen, Wagner, & Rashotte, 1994).

Overwhelming evidence suggests that with instruction, children can acquire phonological awareness and that this instruction should be provided for all beginning readers (Blachman, 1984; Bradley & Bryant, 1983; Cunningham, 1990; Jerger, 1996; Lundberg, Frost, & Petersen, 1988; Stanovich, Cunningham, & Cramer, 1984; Treiman & Baron, 1983; Wagner & Torgesen, 1987; Williams, 1980). Findings have indicated that specific language experiences can be offered to children which result in significant increases in phonological awareness. Reading is a language-based activity which does not develop naturally, and many children need reading skills taught explicitly and systematically (Cunningham, 1990; Lundberg, Frost & Petersen, 1988; Lyon, 1998; Torgesen, Wagner, & Rashotte, 1994). Children can be helped to understand the alphabetic principle as their phonological awareness is developed through language-rich

activities where children are encouraged to play with the sounds of language (Edelen-Smith, 1997; Griffith & Olson, 1992; Juel & Meier, 1999; Tunmer, Herriman, & Nesdale, 1988; Watkins & Bunce, 1996; Yopp, 1992; Yopp, 1995).

The acquisition of reading is not confined to school settings, but is a lengthy process, beginning very early in development (Lyon, 1997; Snow, 1998). In order to benefit optimally from primary school instruction, children must develop a strong basis in prerequisite language and cognitive skills in their home environments (Snow, 1998). Children who are exposed to stimulating, high quality language literacy activities (e.g., activities that direct attention to the sound of spoken words and the relation between print and speech) at young ages are acquiring elementary reading skills (International Reading Association, 1998; Lyon, 1997; Snow, 1998) and will be better prepared for reading than children without these experiences (Lyon, 1998; Pearson & Dunsmore, 1998). Conversely, children from homes that do not support literacy learning must depend on school for reading success. Further, such children must acquire an understanding of reading in a shorter period of time if they are to avoid reading failure (Bergeson, Ciardi, & Miller, 1998).

Statement of the Problem

Research has consistently shown that phonological awareness is correlated to reading acquisition, predicts reading success, and can be taught (Ball & Blachman, 1991; Bradley & Bryant, 1983; Cunningham, 1990; Hatcher, Hulme, & Ellis, 1994; Lie, 1991; Lundberg, Frost, & Peterson, 1988). Homes in which there are high levels of adult/child interaction, where oral communication is encouraged, and where literacy activities are

provided are instrumental in the development of reading (Rush, 1999; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991). Despite research findings, however, many homes do not support literacy learning and social interactions that prepare children for reading acquisition in school (Bergesen, Ciardi, & Miller, 1998). Many children need more than the training of the school setting, and many parents need the assistance of teachers and interventions in order to provide their children with effective, systematic language-related activities (Rush, 1999; Snowling, 1996; Walker, Greenwood, Hart, & Carta, 1994). Consequently a need exists for an empirically supported, home-based intervention to enhance children's phonological awareness.

Purpose of the Project

The purpose of this project was to create an interactive video curriculum using research supported activities which facilitate the acquisition of phonological awareness for young children through parent-child interactions. The project targets those who may be more at-risk for early reading failure due to insufficient home literacy experiences but can be used by any family. The curriculum includes activities on video, corresponding work sheets, and an instructional guide for teacher use.

Definition of Terms

1. accommodation - changing the existing scheme to include the experience (Biehler & Snowman, 1986)
2. adaptation - the tendency to adjust to fit one's environment (Biehler & Snowman, 1986)

3. alphabetic orthography - a language in which symbols represent abstract sound units (Snider, 1995)
4. alphabetic principle - the understanding that letters represent sounds and that words consist of those sounds (Smith, Simmons, & Kameenui, 1995)
5. assimilation - the perception and interpretation of experiences so they fit into an existing understanding (Biehler & Snowman, 1986)
6. blending - responding to a sequence of isolated speech sounds by recognizing and pronouncing the words that they constitute (Williams, 1980)
7. coarticulated - the merging of sounds within a syllable (Torgesen & Bryant, 1994)
8. code - a representation (e.g., digits, letters, words, or pronounceable nonwords) used to store verbal material (Torgesen et al., 1994)
9. Compound phonemic awareness - awareness of the sounds of language as evidenced by tasks requiring the isolation and holding of a sound in memory while performing another operation (Yopp, 1988)
10. continuous sounds - sounds which can be stretched out when spoken (e.g., f, l, m, n, r, and all vowel sounds) (Snider, 1995)
11. decode - Translating letters into sounds to access the pronunciation of a word (Smith, Simmons, & Kameenui, 1995)
12. deletion - the omission of a designated phoneme from a spoken word (Lewkowicz, 1980)
13. equilibrium - an innate feeling of satisfaction with the comprehension of external events (Biehler & Snowman, 1986)

14. explicit instruction - instruction characterized by direct teaching and modeling (Smith, Simmons, & Kameenui, 1995)
15. isolation - the pronunciation of a phoneme occupying a designated location in a given word (Wallach & Wallach, 1976)
16. logographic language - a language in which symbols convey meaning (Snider, 1995)
17. manipulation - adding, omitting, moving, or deleting phonemes to create new words or non-words (Adams, 1990)
18. memory span tasks - tasks that require brief, verbatim retention of sequences of verbal items (Torgesen et al., 1994)
19. metalinguistic - the ability to think about features of words (Jerger, 1996)
20. oddity tasks - tasks requiring the ability to recognize, compare, and contrast spoken sounds (Adams, 1990)
21. onset - any beginning consonants of a syllable (Stahl & Murray, 1994)
22. organization - the capacity to combine thinking processes into logically interrelated systems Biehler & snowman, 1986)
23. phoneme - the smallest understandable segment of speech (Shaywitz, 1998)
24. phoneme-grapheme knowledge - an understanding of the relationship between alphabetic symbols and spoken sounds (Juel, 1996)
25. phonemic analysis - the performance of any number of operations on a word or non-word requiring perception of its individual sounds (Lewkowicz, 1980)
26. phonemic awareness - awareness of discreet individual sounds (phonemes) that correspond to letters (Smith, Simmons, & Kameenui, 1995)

27. phonemic synthesis - the combination of a sequence of speech sounds to produce a word or non-word (Lewkowicz, 1980)
28. phonological awareness - sensitivity to the phonological structure of words in one's language (Torgesen et al., 1994)
29. phonological memory - the brief, verbatim retention of sequences of verbal items (Torgesen et al., 1994)
30. phonological processing skills - an individual's mental operations that make use of the sound structure of oral language when learning how to decode written language (Torgesen, Wagner, & Rashotte, 1994)
31. rapid automatic naming tasks - tasks requiring the ability to name, as rapidly as possible, a series of printed items (Torgesen et al., 1994)
32. rate of access - the ability to rapidly and easily access phonological information that is stored in long-term memory (Torgesen et al., 1994)
33. rime - the vowel and any final consonants of a syllable (Stahl & Murray, 1994)
34. scaffolding - the process of providing support for a child's cognitive process (Biehler & Snowman, 1986)
35. scheme - a pattern of thought or behavior (Sprinthall & Sprinthall, 1987)
36. segmentation - separately articulating all the sounds of a word in the correct order (Williams, 1980)
37. Simple phonemic awareness - the awareness of the sounds of language as evidenced in tasks requiring the performance an operation and then a response (Yopp, 1988)

38. stop sounds - sounds that are difficult to say in isolation because a vowel may be inadvertently added (e.g., /b/ pronounced /buh/) (Snider, 1995)
39. zone of proximal development (ZPD) - proposed by Vygotsky, a continuum of behaviors or maturations (Bodrova & Leong, 1996)
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Organization of the Project

Chapter one includes the statement of the problem, the purpose of the project and the definition of terms. Chapter two contains a review of literature related to phonological awareness. The relationship between phonological awareness and learning to read is discussed, and a rationale for parent-child activities is provided. Chapter three outlines the procedures followed to create the interactive video curriculum. Chapter four is the curriculum detailed, with sample activities and instructional guide. Chapter five summarizes the project and presents conclusions.

CHAPTER 2

Review of Selected Literature

There is emerging agreement by those who study the acquisition of early reading skills of the importance of phonological processing abilities (Ball & Blachman, 1991; MacDonald & Cornwall, 1995; Stanovich, 1994; Torgesen, Morgan, & Davis, 1992). Researchers of early reading development refer to phonological processing skills as "an individual's mental operations that make use of the phonological or sound structure of oral language when he or she is learning how to decode written language" (Torgesen, Wagner, & Rashotte, 1994, p. 276). Studies have produced extensive evidence that the acquisition of beginning reading skills is positively related to at least three general kinds of phonological processing skills (Torgesen, Wagner, & Rashotte, 1994): phonological awareness, phonological memory, and the rate and ease of access of phonological information.

Phonological Processing Skills

The first broad skill, phonological awareness, is defined as a sensitivity to, and an awareness of, the sound structure of language (Torgesen, Wagner, & Rashotte, 1994; Torgesen & Bryant, 1994). It is the discernment that words contain syllables, onsets, rimes, and a sequence of individual phonemes (Ball & Blachman, 1991; Torgesen, Wagner, & Rashotte, 1994). Two major dimensions of phonological awareness have been described by Torgesen et al. (1994): sensitivity to phonemes and explicit awareness of

phonemes. Sensitivity implies a clear perception of speech sounds, but does not require processing skills. Explicit phoneme awareness, however, requires metalinguistic capacities (self-awareness of intellectual processes having to do with language).

Phonological awareness is measured by tasks that assess one's ability to identify, blend, or isolate individual phonemes, or sounds, in words. Beginning tasks consist of sensitivity to rhyme and identification of words with matching initial or final consonants. Other typical tasks include counting the number of syllables or phonemes in a word. At a more difficult level, the ability to explicitly blend, separate, or manipulate the sounds in words is assessed (Stahl & Murray, 1994; Torgesen, Wagner, & Rashotte, 1994). An example of the latter might be to ask a child to pronounce a word if the first sound is deleted, or to pronounce a word if the end sound is substituted by another. Kindergarten children typically perform well on measures of phonological sensitivity, yet the full development of explicit phonological awareness is not usually realized until reading instruction begins, in first grade (Torgesen et al., 1994).

Phonological memory, the second processing skill, requires that nonmeaningful, verbatim sequences of verbal items be retained momentarily (Torgesen et al., 1994). The codes used to store the verbal material (e.g., letters, words, nonwords, digits) are essentially composed of phonological features. Difficulties on memory span tasks, those tasks that require simultaneous storage and processing of individual sounds in word (such as blending phonemes together to form a word), involve problems in the mental representation of the features of language (Hansen, 1989).

While comparing the validity and reliability of phonemic awareness assessment strategies, Yopp (1988) distinguished between two phonological processing competencies. The first Yopp called "Simple Phonemic Awareness" (observed in segmentation, phoneme blending, sound isolation, and phoneme counting activities). The second, similar to Torgesen et al.'s (1994) phonological memory, is observed in tasks that require holding a sound in memory while performing additional operations (e.g., phoneme deletion and word-to-word matching). This Yopp termed "Compound Phonemic Awareness."

The third comprehensive phonological processing skill is the rate and ease of phonological access with which a child is efficiently able to use information stored in long-term memory. Rapid automatic naming tasks are commonly used for assessing rate and ease of phonological access. These tasks require children to name, as rapidly as possible, a series of 30 to 50 printed items (objects, letters, colors) that appear on a stimulus sheet. The ease and speed with which phonological codes are accessed is believed to influence the extent of usefulness of phonological information in decoding (Torgesen et al., 1994).

Based on a longitudinal study of 288 children, Torgesen and his colleagues (1994) concluded that while all of the phonological abilities were causally related to subsequent reading growth phonological awareness was the most critical. It emerged as the significant causal agent when all three variables were considered together. According to The Center for the Future of Teaching & Learning (1998), of the three major phonological processing skills the most prevalent linguistic deficit in disabled readers appears to be phonological awareness. In addition to the significant relationship of phonological awareness to reading, findings have indicated that a child's sensitivity to phonemes can be

increased with training (Torgesen, Morgan & Davis, 1992; Lundberg, Frost & Petersen, 1988). In consideration of these factors, the focus of this project will be on the processing skill of phonological awareness.

Defining Phonological Awareness

Phonological awareness is not needed to speak or understand speech, but is essential to reading, writing, and spelling. This awareness is necessary in an alphabetic orthography such as the English language (Griffith & Olson, 1992; Lyon, 1997; Snider, 1995). In such a language, symbols represent sounds. The symbols, meaningless in and of themselves, are linked to equally abstract sounds. As the two paired in production of words, meaning is realized from print. Beginning readers must use the alphabetic code (the awareness that words can be broken down into smaller parts and that these parts are represented by symbols) in order to make sense of written words. A person with well-developed phonological skills will find this system reasonable, but to a person with little or no phonological awareness the system appears random and meaningless (Ball & Blachman, 1991; Stanovich, 1986).

The nature of an alphabetic language differs from languages such as Chinese or the Japanese Kanji (Snider, 1995; Wagner & Torgesen, 1987). The symbols in these logographic languages do not represent sounds from which meaning is made, but instead convey meaning in and of themselves. This system requires the reader to memorize each symbol and its corresponding essence in order to read. The learning curve for Chinese readers is slow and gradual. Rozin and Gleitman (as cited in Snider, 1995) indicate that as

rote memory overloads, the curve gradually decreases and tapers off after seven or eight years at several thousand characters. In an alphabetic language the beginning readers start slowly as the learner develops an understanding of the alphabetic principle, and then jumps to the level of the learner's oral comprehension (Snider, 1995). She suggests that beginning readers who memorize each word as a holistic visual pattern may not acquire the alphabetic principle. Their learning curve will be more like the Chinese, leveling off in the primary grades with a relatively small vocabulary.

A child without phoneme-grapheme knowledge relies on memory and context to analyze words (Juel, 1996). Predictable texts are available which can be memorized and recited. However, Gough (as cited in Snider, 1995) suggests that most content words, those words which hold the meaning of a text, are not predictable. The same content words (e.g. *alligator* or *engine*) tend to appear rather infrequently in text, and are not presented enough to memorize. With each new word, memory becomes more taxed (Juel, 1996). Children with excellent visual memory but poor phonological awareness may be able to compensate for a number of years before the number of words exceeds the capacity of memory (Jerger, 1998). For children with less robust memory, their limited recall can become a deterrent to successful reading. The child, however, who can supply sounds to most of the letters in a word is able to make sense of reading. In a longitudinal study of first and second grade children, Juel, Griffith, and Gough (1986) concluded that "children will not acquire spelling-sound correspondence knowledge until a prerequisite amount of phonemic awareness has been attained" (p. 254). Phonological awareness, therefore, is considered crucial to the development of the alphabetic principle, which is a

fundamental skill for reading an alphabetic script (Adams, 1990; Tunmer, Herriman, & Nesdale, 1988).

A fundamental task of the beginning reader is to develop the understanding of the connection between phonemes, the sounds of speech, and letters, the symbols of print (Ball & Blachman, 1991; Juel, 1996). This is difficult for many children because of the abstract nature of phonological awareness (Lundberg, Frost, & Petersen, 1988). The English spoken language consists of more than forty phonemes (Juel, 1996) joined in a variety of ways. Some letter-combinations and letters represent more than one sound, while some individual sounds correspond to more than one letter or letter cluster (Williams, 1984). These phonemes, the small variations in sound, are not perceived as distinct from one another when words are spoken (Liberman, Cooper, Shankweiler, & Studdert-Kennedy, 1967). For example, when analyzed by spectrographs, phonemes of a spoken word are not separated in the acoustic signal itself. They are coarticulated, or merged, into larger units, and it is often impossible to separate them out without some articulatory distortion (Liberman, Shankweiler, Liberman, Fowler, & Fischer, 1977). The nature of the acoustic signal is complex, offering no simple physical criterion for the segmentation of distinct phonemes (Liberman, Cooper, Shankweiler, & Studdert-Kennedy, 1967). Compounding the difficulty of the task, the actual sound of a single phoneme can have subtle differences depending on the specific vowel or consonant with which it is articulated. A phoneme such as /l/ when spoken in the words *leave*, *feel*, and *truly*, yields different pronunciations (Torgesen & Bryant, 1994). Gaining access to these

overlapping phonemes becomes more a matter of abstraction than discrimination (Ball & Blachman, 1991).

Components of Phonological Awareness

Torgesen, Morgan, and Davis (1992) differentiated between two phonological awareness tasks: phonemic analysis and phonemic synthesis. Phonemic analysis (or segmentation, as it is occasionally referred to) is defined as the performance of any of a number of operations on a whole spoken word which requires perceptions of its individual sounds (Lewkowicz, 1980). It includes the identification and segmentation of individual syllables or phonemes in a word or deletion of an initial, medial, or final sound. Such tasks may include pronouncing the word *bag* as isolated phonemes (/b/ /a/ /g/), or saying the word *bag* without the /b/ sound. Phonemic synthesis tasks call for the ability to blend isolated linguistic segments (individual syllables, phonemes, onsets, or rimes) into recognizable words or pseudowords. This type of task may require a child to blend the sounds /k/ /a/ /t/ into the word *cat*, or the syllables *kit* and *ten* into the word *kitten*.

Levels of Phonological Awareness

Phonological awareness is not a single ability, but is comprised of diverse components each varying in complexity (O'Connor, Jenkins, Leicester, & Slocum, 1993; Yopp, 1988). It is a hierarchy of metalinguistic skills that develop gradually in children (Stahl & Murray, 1994; Torgesen, Wagner, & Rashotte, 1994). Each is more complex and is obtained later in maturation than the next. An awareness of larger units of speech

(e.g., sentences, words, syllables) is developed before children become sensitive to smaller ones, called onsets or phonemes (Fox & Routh, 1975). These two individual skills are separate from one another, and mastery of one phonological task does not guarantee transfer to another (O'Connor, Jenkins, Leicester, & Slocum, 1993). Children may rate high on one measure and low on another (Stahl & Murray, 1994), and all children may not pass through the same stages in the same order (Stuart and Coltheart, 1988). While no research has determined an exact order in the acquisition of specific sounds in the development of phonological awareness (International Reading Association, 1998), it is generally believed that there is a developmental sequence (see figure 1) (Adams, 1990; Chafouleas, Lawrence, Lewandowski, Smith, & Blachman, 1997; Liberman, Shankweiler, Fisher, & Carter, 1974; Wagner & Torgesen, 1987).

Difficulty	Task	Description
Easiest	Word	Awareness of distinct words
	Syllable	Awareness of distinct syllables
	Onset-rime	Awareness of distinct onset (first consonant/s of a word or syllable) and rime (the following vowel and final consonant/s of a word or syllable)
Hardest	Phoneme	Awareness of individual sounds in words

Figure 1. Levels of Phonological Awareness

A rudimentary phonological awareness can be observed in children at an early age. The awareness of spoken words is realized first (Adams, 1990). Then, at about age 3,

children are able to comprehend that sentences and phrases are comprised of separate, distinct words (Fox & Routh, 1975; Sawyer, Dougherty, Shelly, & Spaanenburg, 1990). Syllable awareness develops next (Fox & Routh, 1975; Liberman, Shankweiler, Fisher & Carter, 1974; Wagner & Torgesen 1987). For example, in their study, Liberman et al. (1974) showed that while only about one-half of the preschool children tested could tap out syllables, 90 percent could accomplish this task at the end of kindergarten.

According to Treiman (1985) the next step appears to be recognition of rimes (any beginning consonants) and onsets (the vowel and any final consonants). As examples, the onset of the word *top* is *t* and the rime is *op*. In the first syllable of the word *chicken*, the onset is *ch* and the rime is *ick*. In assessing whether the awareness of rimes and onsets affect a child's ability to discern syllables, Treiman (1985) acquainted a group of five year olds with two puppets who each had a favorite sound. While manipulating the puppets, the children repeated a series of tapped syllables, making the puppet say whether the syllables began with the puppet's favorite sound. The syllables were presented as either a "favorite" consonant followed immediately by a vowel sound (e.g., */fa/* or */si/*) or as the "favorite" consonant followed immediately by another (e.g., */fla/* or */stil/*). It was determined that the child's ability to recognize the initial consonant depended upon whether it was a single member of the syllable's onset. Treiman presented evidence that the awareness of syllable onsets is not only a different challenge, but it is also simpler than the awareness of individual phonemes. The most difficult of metalinguistic skills, the ability to attend to one sound in the context of other sounds in a word follows, and

explicit phoneme awareness usually is attained after reading instruction begins (Torgesen et al., 1994).

The greatest increase in phonological awareness occurs between kindergarten and first grade (Liberman, Shankweiler, Fischer, & Carter, 1974). Chafouleas, Lewandowski, Smith, and Blachman (1997) found in examining children's performance on phonological awareness across tasks and ages that all eleven of the tasks measured in their study had a median attainment during the 6-year age range. Due to task mastery, performance on phonological awareness skills typically levels off by age 7 (Chafouleas et al., 1997).

Levels of Phonemic Awareness

Adams (1990) describes five levels of phonemic awareness beginning with the easiest and progressing to the most difficult (see figure 2).

Difficulty	Task	Description
Easiest	Appreciation of nursery rhymes	Hearing and reciting rhymes
	Comparison of sounds	Recognizing, comparing, and contrasting sounds in words
	Blend and split syllables	Blending or splitting segments of words (phonemes or syllables)
	Segmentation	Isolating individual phonemes
Hardest	Manipulation	Adding, omitting, moving and deleting phonemes

Figure 2. Levels of phonemic awareness (Adams, 1990)

First and most primitive is the appreciation of rhyme as measured by the capability to remember nursery rhymes. It involves nothing more than the ability to hear the sounds of words. Maclean, Bryant, and Bradley (1987) tested their hypothesis that children's knowledge of nursery rhymes was the fundamental element of phonemic awareness.

Sixty-six children, average age three years and three months, were asked to recite five popular nursery rhymes. Every four months the children's progress was assessed with oddity tasks on rhyme and alliteration production and on ability to recognize letters and words. When the influences of IQ and parents' education and social class were factored out, the researchers found that early knowledge of nursery rhymes correlated strongly with the development of more abstract phonological skills and also with emergent reading abilities. The results are supported by a study of preschool children by Wood and Terrell (1998) who suggest that preliterate rhyme detection ability plays a key role in subsequent reading and spelling development.

The second level of phonemic awareness requires the capacity to recognize, compare, and contrast sounds (e.g., rhyme and alliteration) in words and syllables. Oddity tasks have been used to determine this ability. In assessment, children are asked which of the words in a group is different or does not belong using beginning (e.g. *hit*, *sack*, *hop*, *hard*), middle (e.g. *sun*, *hut*, *pig*, *bug*), or final sound (e.g. *top*, *numb*, *jam*, *Tim*, or *sand*, *hand*, *pick*, *land*). Children are requested to group words according to similarities or dissimilarities in sound. Rhyme and alliteration tasks require the methodical focusing of attention on the sound components of words, but they do not necessitate the ability to segment syllables into individual phonemes. The simplicity of using oddity tasks to

measure rhyme and alliteration allows them to be especially useful in determining the contribution of phonemic awareness to the reading acquisition of young children (Adams, 1990). They provide a way to measure phonological awareness in prereaders. For example, Bradley and Bryant (1983) gave an oddity task to several hundred preschoolers.

In measuring for reading achievement more than three years later, the researchers found that the children's initial oddity test scores and their later acquisition of reading skills were significantly related.

The third level is characterized by two skills: the ability to both blend syllables and split syllables. Syllable blending requires children to combine the phonemic segments of a word together (e.g., a child responds with the word *mop* when presented with the sounds /m/.../o/.../p/). This task is similar to the fourth-level skill of segmentation, yet it differs in several respects (Adams, 1990). In blending, the examiner provides the segments of the word, while the student is asked to put them together. The phonemic segments are given to the child, in contrast to segmentation, where a child must be able to break a syllable into phonemes, and have the understanding of what a phoneme is. The capacity of memory necessary to perform segmentation tasks exceeds that required to perform blending.

Although simple, the ability to blend is a powerful test of the child's familiarity of phonemes (Perfetti, Beck, Bell, & Hughes, 1987). Blending tasks have been demonstrated to correlate positively to reading acquisition (Fox & Routh, 1984; Majsterek & Ellenwood, 1995). Perfetti, Beck, Bell, and Hughes (1987) assert that blending "taps an essential but primitive knowledge of segmentation. Success at reading depends on it" (p. 317).

The second skill in this third level, syllable splitting, requires children to have and apply the insight that the initial sound of a syllable (or word) can be broken way. The children do not have to think of syllable as a string of individual phonemes, but must be able to carefully attend to the entire syllable or word and have the insight to be able to delete its initial sound. In a typical task the child is asked to separate the first phoneme of a word or syllable from the remaining sounds (e.g., given the word *bat* the child responds with /b/; given *carton*, the child responds with /k/). A child may also be asked to perform the reverse task, removing the initial phoneme and pronouncing the remaining sound (e.g., given the word *horse* the child responds with /ors/; given *pumpkin* the child responds with /umpkin/). To be successful, children must be able to restrict their active attention to the individual, acoustically indivisible initial phonemes. In their longitudinal study of kindergartners, Share, Jorm, Maclean, and Matthews (1984) found that of thirty-nine different prereading characteristics, the best predictor of first-grade reading achievement was syllable splitting performance.

The fourth level, phonemic segmentation, requires the capacity to isolate individual sounds in syllables. It necessitates the thorough understanding that a word can be divided into a series of phonemes, and the ability to analyze them on demand. Liberman, Shankweiler, Fischer, and Carter (1974) devised a tasks to determine the relationship between a child's ability to segment syllables and their age. After extensive training and modeling children, ages four to six, were asked to tap out the number of phonemes in each word presented (e.g., the child should tap twice for the word *at*). Success was considered to be a series of six correctly tapped words. None of the four year olds, 17

percent of the five year olds, and 70 percent of the six year olds were successful. They found that the skill, for many, develops around the time when children commence formal reading instruction. At the end of second grade, the Wide Range Achievement Test was administered to the children to determine the correlation between ability in phonological segmentation and reading achievement (Liberman, Shankweiler, Liberman, Fowler, & Fischer, 1977). Liberman and colleagues found that of the children who had failed the phoneme tapping task, half were in the lowest third of their class in reading achievement and none were in the top third. Segmentation as measured with the tapping task and reading achievement were found to be strongly correlated.

Many other studies have found performance specifically on the task of phoneme analysis, or segmentation, to be predictive of early reading success (Blachman, 1984; Calfee, Lindamood, & Lindamood, 1973; Juel, Griffith & Gough, 1986; Mann & Liberman, 1984; Muter, Hulme, Snowling, & Taylor, 1997; Share, Jorm, Maclean, & Matthews, 1984; Stanovich, Cunningham, & Cramer, 1984; Torgesen, Wagner, & Rashotte, 1994; Tunmer, Herriman, & Nesdale, 1988; Yopp, 1988). Share et al. (1984) determined the order of traits that predicted end-of-year reading success of over 500 Australian children at the conclusion of first grade. Phoneme segmentation was the best predictor, above kindergarten teacher's predictions of reading success, the Peabody Picture Vocabulary Test, number of books the child owned, amount that parents read to their child, whether or not the child attended preschool, and hours of TV the child watched. Adams (1990) concurs. Based on her extensive review of research, she

describes phoneme segmentation and manipulation as "remarkably strong" predictors of beginning reading acquisition (p. 81).

At the most difficult level of phonological awareness, children must perform phoneme manipulation tasks by adding, omitting, moving, and deleting phonemes to create new words (or nonwords). Children are asked to reorder the phonemes of a syllable, add extra phonemes to a word, or pronounce a word after they have removed a phoneme (e.g., *jam* without the /j/, *tramp* without the /m/, or *smoke* without the /k/). Fairly refined phonemic segmentation skills are necessary in order to pick out the target phoneme from a given stimulus item. A high degree of memory and cognitive skill are then required to reorder or delete the phonemes or put a new word back together with a new phoneme. When comparing differing levels of linguistic complexity in phonological awareness tasks, Stahl and Murray (1994) found that the ability to manipulate onsets and rimes related most strongly to reading. Rosner (1974), in his year long attempt to train kindergarten students on the phoneme deletion task, had very little success. He suggested that the sophistication of these tasks puts them beyond the scope of children before the very end of first grade, when fairly well-advanced phonemic manipulation and segmentation skills develop

Relationship Between Phonological Awareness and Reading Acquisition

Research has shown phonological awareness to be a crucial skill for the acquisition of reading (Ball & Blachman, 1991; Calfee, Lindamood, & Lindamood, 1973; Stanovich, 1986; Stanovich, 1994; Torgesen, Morgan, & Davis, 1992; Tornéus, 1984). Success in phonological awareness is related to the beginning stages of reading (Adams, Foorman,

Lundberg, & Beeler, 1998; Blachman, 1984; Lundberg, Frost, & Petersen, 1988; Stanovich, Cunningham, & Cramer, 1984; Wagner & Torgesen, 1987; Wagner, Torgesen, & Rashotte, 1994). In longitudinal study, Bradley and Bryant (1983) trained a group of nonreaders on the task of categorizing words based on initial, medial, and final sounds.

The intense two year training involved 40 individual sessions. After administering standardized tests the researchers concluded that phoneme awareness had a substantial influence on achievement in reading and spelling. Stanovich (1994) considers the child's level of phonological awareness to be the best predictor of early reading acquisition, better even than a standardized intelligence test (e.g., Otis-Lennon School Ability Test).

Phonological awareness is also highly correlated to future reading achievement in later school years (Alegria, Pignot, & Morais, 1982; Calfee, Lindamood, & Lindamood, 1973; Juel, 1988; Share, Jorm, Maclean & Matthews, 1984; Stanovich, Cunningham, & Cramer, 1984; Torgesen, Wagner, & Rashotte, 1994; Treiman & Baron, 1983; Tunmer & Nesdale, 1985). In their longitudinal study, following children from kindergarten to eleventh grade, MacDonald & Cornwall (1995) found that phonological awareness was a significant predictor of both word identification and spelling skills eleven years after assessment in kindergarten. It was seen to be a better predictor than kindergarten levels of reading and spelling achievement. Tunmer, Herriman, and Nesdale (1988) used a phonemic segmentation task as their measure of phonological abilities in a longitudinal study of 118 first grade children. Reading skills at the end of second grade were significantly correlated with performance on the segmentation measure two years earlier.

Research also indicates that children without phonological awareness will most likely become poor readers (Bradley & Bryant, 1983; Juel, 1988). Several longitudinal studies (Juel, 1988; Juel, Griffith, & Gough, 1986; Torgesen, Wagner, & Rashotte, 1994) note that children with poor phonological skills will continue to evidence poor phonological skills in later years, even into adulthood (Bruck, 1992). These children, because of their reading difficulty, will experience frustration, difficulty, and perhaps a loss of self-esteem. Those who learn early to decode words will read more, will most likely have an expanded imagination and vocabulary, and will have an enhanced concept of the world (Juel & Meier, 1999). The gap in reading, writing, and language between those who developed an understanding of the phonology of language early and those who do not will only increase through the years (Juel, 1988; Stanovich, 1986).

As the above research indicates, the correlation between phonological awareness and learning to read is well established. The issue of causal direction, however, is open to differing interpretations. Torn eus (1984) has distinguished four possible relationships. First, metaphonological abilities (the awareness of the sound properties of one's language) may be a prerequisite for reading. Second is the possibility that phonological awareness acts as a facilitator, allowing children with metaphonological abilities to acquire reading faster than those children without it. Backman (1983) considers the difference between a facilitative skill and a prerequisite very hard to determine empirically, and, as the causal direction is the same in both instances, he states that the question may be one of academics. In this paper, the two possibilities will be considered as one.

Third, reading may be a prerequisite for becoming aware of phonological structures. Fourth, the relationship between linguistic awareness and success in reading acquisition may be caused by a third, mediating factor, such as IQ. Lewkowitz (1980) and Williams (1984) have suggested a fifth possibility: the relationship between phonological awareness and reading acquisition may be reciprocal, each improving upon the other.

Phonological Awareness as a Prerequisite for Reading

A growing body of evidence suggests that phonological awareness is a necessary prerequisite in reading acquisition (Adams, 1990; Fox & Routh, 1984; Mann & Liberman, 1984; Stanovich, 1994; Tunmer, Herriman, & Nesdale, 1998; Tunmer & Nesdale, 1985; Wagner & Torgesen, 1987). Those who back the view that phonological awareness is necessary to acquire reading skills reason that an individual with metaphonological abilities has distinct advantages when learning to read (Wagner & Torgesen, 1987). Our system of alphabetic orthography is viewed as a sensible way to represent our language. Also, an understanding of the process of segmenting phonemes and blending them together to form words gives one an advantage when learning to read. Tornéus (1984), after testing several causal models, concluded that early reading and spelling are dependent upon metaphonological abilities. No support was found for the reverse causal influence. In a three-year longitudinal study, Bradley and Bryant (1985) examined the relationship between phonological awareness and reading. The subjects were 368 children who, at the beginning of the study, ranged from four to five years old. A sound categorization task

(to determine the subjects' level of phonological awareness), a memory span task, the English Peabody Picture vocabulary Test, and various other tests were administered. Three years later, the children were given the sound categorization task again, two standardized achievement test of reading and spelling, and a short form of the Wechsler Intelligence Scale for Children. Bradley and Bryant found that phonological awareness was a causal element in the children's success in early reading. Juel, Griffith, and Gough (1986), in their longitudinal study of first and second grade children, concluded:

We believe we have shown the extreme importance of phonemic awareness in literacy acquisition. We also believe we have shown that children will not acquire spelling-sound correspondence knowledge until a prerequisite amount of phonemic awareness has been attained. Without such phonemic awareness, exposure to print does little to foster spelling-sound knowledge. (p. 245)

Much evidence that supports the hypothesis that phonological awareness has an influence on learning to read comes from training studies (Adams, Foorman, Lundberg & Beeler, 1998; Ball & Blachman, 1991; Bradley & Bryant, 1983; Cunningham, 1990; Lie, 1991; Treiman & Baron, 1982; Wallach & Wallach, 1976; Williams, 1984). For example, Lundberg, Frost, and Peterson (1988) developed an extensive program for 235 Danish preschool children, with the intent of training the children to become more metaphonologically aware of the structure of language. After being pretested with a number of linguistic and metalinguistic tasks, the group was given daily 15-20 minute training sessions of metalinguistic exercises and games. The eight month program, from September to May, was carefully structured and sequenced for difficulty, length,

frequency, and timing. The control group, 155 boys and girls, followed the regular Danish preschool program, which typically avoids formal cognitive and linguistic instruction, including training in reading. Posttests were administered at the end of the school year. A test of the level of phonological awareness was given at the beginning of first grade and at the end of first grade, and reading and spelling ability was measured in the middle of second grade. Lundberg et al. found that phonological awareness facilitates subsequent reading acquisition, and that it can be developed in young children. Explicit instruction was found to be the crucial factor. Phonological ability, specifically segmentation ability, did not appear to develop spontaneously. Juel, Griffith, and Gough (1986) suggest that children should be routinely trained in oral phonological awareness before being given formal reading instruction, as is the case in the Soviet Union (Downing, 1984). Based on these training studies the conclusions can be drawn that phonological awareness 1) can be developed before reading ability, and 2) facilitates the acquisition of subsequent reading skills (Snider, 1995).

Reading as a Prerequisite for Phonological Awareness

It also is argued that phonological awareness is affected by and is a consequence of the acquisition of reading skill (Adams, 1990; Alegria, J, Pignot, E., & Morais, J., 1982; Morais, Bertelson, Cary, & Alegria, 1986; Morais, Cary, Alegria, and Bertelson, 1979; Perfetti, Beck, Bell, & Hughes, 1987; Perin, 1983; Strickland & Cullinan, 1991). Learning to read may provide explicit knowledge of the phonological composition of language. This in turn may supplement the mostly implicit knowledge acquired from

experience at listening and speaking (Wagner & Torgesen, 1987). Read, Yun-Fei, Hong-Yin, and Bao-Qing (1986) found that Chinese adults who were not taught the pinyin (alphabetic) script in school were not able to add or delete phonemes in spoken words as well as those who did learn the pinyin script in school. In a cross-cultural study, Mann (1986) compared the development of Japanese and American children's awareness of syllables and phonemes. In Japan, children learn to read using Kanji (a morphology-based system) and Kana (a phonology-based system emphasizing syllables, not phonemes). Results showed that the reading experiences of Japanese students influence phonological counting and deletion tasks. The tapping test of Liberman, Shankweiler, Fischer, and Carter (1974) described above may not be influenced so much by children's phonological awareness, but by their ability to read (Adams, 1990).

Reciprocity of Phonological Awareness and Reading Acquisition

The two sets of evidence discussed above are not necessarily contradictory. Stuart and Coltheart (1988) proposed that (a) in learning an alphabetic script individuals become more aware of the phonology of language, and (b) in developing phonological awareness individuals acquire reading skills. In their study of first grade children, McGuinness, McGuinness, and Donohue (1995) found that while early phonological processing skills predict success in learning to read, phonological processing was also highly impacted by learning to read. Metaphonological skills may be acquired both by learning to read and by explicit training in phonemic skills. It is possible that different tasks or levels of linguistic awareness precede learning to read, whereas other levels may result from learning to read

(Muter, Hulme, Snowling, & Taylor, 1997; Stahl & Murray, 1994). Following a review of studies, Smith, Simmons, and Kameenui (1995) reasoned that while awareness of onset and rime both precedes and is casually related to learning to read, awareness of phonemes develops at least partly as a consequence of learning to read. Studies suggest that the more complex phonological awareness is furthered by reading acquisition and that the more simple phonological awareness is a causal factor in reading success (Wagner, Torgesen, & Rashotte, 1994). Perfetti, Beck, Bell, and Hughes (1987) assert that the phonemic knowledge necessary for reading acquisition is not the same knowledge that is produced by learning to read. Drawing their conclusions from a year long study of first graders, Perfetti et al. found the task of phoneme synthesis to be essential in acquiring reading. In contrast, performance on other phonemic tasks (e.g., phoneme deletion, identification of the number of phonemes in a word) was enhanced by reading instruction. Both print knowledge and speech knowledge may interact with each other, each enhancing the development of the other (Williams, 1984).

An Intervening Factor in the Relationship between Phonological Awareness and Reading

It is possible that the observed positive relationship between phonological awareness and reading is caused by a third intervening factor such as cognitive development (Watson, 1984). Perfetti, Beck, & Hughes (as cited in Tornéus, 1984) suggest that as children grow older, their cognitive abilities increase along with their reading skills. They believe that this might reflect both the effect of the reciprocal

relationship between phonological abilities and later reading and the child's cognitive development. In a longitudinal training study of 208 first-grade Norwegian pupils, Lie (1991) found intelligence to be a factor in the development of phonological awareness. Lie's study suggested that students with average to high general intelligence profited less from the training program than those with low general intelligence.

It is no longer enough to focus on the causal direction of reading and phonological awareness (Wagner & Torgesen, 1987). The crucial questions now become: 1) Which of the aspects of phonological processing (e.g., rate and ease of access of phonological information, recoding in working memory, and phonological awareness) is causally related to which aspects of reading acquisition (word analysis, word recognition, sentence comprehension), and 2) What are the directions of the causal relations? It is not as yet understood which of the phonological competencies promote reading success, which are reciprocal, and which are incidental. The exact relationship, concludes the International Reading Association (1998), requires further examination. Waiting until the nature and causality of phonological processing skills are thoroughly explored, however, begs a more important question: How do we facilitate phonological awareness?

Implications for Teaching

Overwhelming evidence suggests that children can be trained in phonological awareness and that this instruction should be provided for all beginning readers (Blachman, 1984; Bradley & Bryant, 1983; Cunningham, 1990; Jeger, 1996; Lundberg,

Frost, & Petersen, 1988; Stanovich, Cunningham, & Cramer, 1984; Treiman & Baron, 1983; Wagner & Torgesen, 1987; Williams, 1980). Children can be helped to understand the sound/letter connection as their phonological awareness is developed through language-rich classrooms where children are encouraged to play with the sounds of language (Edelen-Smith, 1997; Griffith & Olson, 1992; Juel & Meier, 1999; Tunmer, Herriman, & Nesdale, 1988; Watkins & Bunce, 1996; Yopp, 1992; Yopp, 1995).

In A Primer on Phonemic Awareness: What It is, Why It's Important, and How to Teach It, Snider (1995) details essential factors for effective instruction of phonological awareness. Snider notes that the first aspect of a phonological awareness curriculum is modeling, which she differentiates from explaining. Modeling involves explicit instruction (e.g., "Listen. I can rhyme with /in/ and begin with /p/. *Pin*. I can rhyme with /in/ and begin with /t/. *Tin*"). Contrast this with instruction utilizing explaining (e.g., "Rhyming words always have the same sound at the end. *Pin* and *tin* both rhyme because they end the same, even though they have different beginning sounds."). To a child who has not developed phonological awareness, explaining won't make sense because words are perceived as whole units, not linear parts with a beginning, middle, and end. Modeling allows the child to clearly hear and observe exactly what task is required. Guided practice follows modeling. In guidance, the teacher aids the child to accomplish the task. Independent practice (e.g., activities, games, learning stations, independent work) completes the instructional sequence and is only provided when the child can consistently perform the task over time.

Secondly, sound teaching of phonological awareness includes a deliberate sequence of skills (Lewkowicz, 1980; Snider, 1995). The activities must progress developmentally. Rhyming is taught first, followed by blending, segmenting, and then sounding out (Carnine, Silbert, & Kameenui, 1990). Continuous sounds, which are easier to hear and manipulate than stop sounds (Edelen-Smith, 1997), are generally introduced before stop sounds (Lewkowicz, 1980; Lundberg, Frost, & Petersen, 1988). Continuous sounds include /f/, /l/, /m/, /n/, /r/, /s/, /v/, /w/, /y/, /z/, and all vowels. The stop sounds include /b/, /c/, /d/, /g/, /h/, /j/, /k/, /p/, /q/, and /x/. When presenting rhyming activities, it is recommended to initially introduce words that start with a continuous sound and progress to words that begin with a stop sound shortly afterwards (Snider, 1995). This sequence will systematically prepare students for pronouncing stop sounds in segmenting activities. Sequencing is involved in phoneme segmentation activities. Lewkowicz (1980) suggests that it is less difficult to isolate the initial sound of a word than it is to isolate the medial or final sound. She indicates that the task of medial or final sound isolation presents too much complexity to children and should wait until confidence in word segmentation is developed.

The aforementioned developmental sequence positions auditory blending before segmenting activities. Auditory blending requires the child to pronounce a word after the teacher has spoken the sounds (e.g., *chimney* from /ch/ /im/ /nee/). Auditory segmentation is an opposite process. After the teacher says a word the child articulates the sounds. When blending, Lewkowicz (1980) believes that the pronunciation of the word blended or segmented should be stretched slowly so that the child can hear the

separate sounds. It is essential, she states, that teachers and students initially use glides to promote the blending process (e.g., the sounds /sssssss//aaaaaaa//mmmmm/ are pronounced *Sam*).

Children should become adept at segmenting and blending tasks before attempting phoneme manipulation. The manipulation tasks are more difficult than segmenting (Lewkowicz, 1980; Adams, 1990). The ability to manipulate the initial sound requires less sophistication than manipulating the middle sound, or performing phoneme reversal tasks (e.g., *pin* becomes *nip*) (Snider, 1995). There is some evidence that phonemic manipulation develops in conjunction with reading (Adams, 1990). It is therefore more important to put more emphasis on phonemic blending and segmentation than on manipulation tasks.

Manipulatives may also be beneficial in teaching segmentation skills. Elkonin (1973), for example, developed a multisensory activity in which children moved a token for each segmented sound heard. Ball and Blachman (1991), in a variation, devised the "Say-it-move-it" activity, using a board with a ball and arrow. Clay (1985) advocates the procedure in her work as a Reading Recovery strategy to encourage children to think about the order of sounds in spoken words. The child, after becoming familiar with these activities, should eventually be able to count the number of sounds and be able to answer questions about the order of sounds (Griffith & Olson, 1992).

Phonological awareness encompasses a hierarchy of metalinguistic skills that begins with an awareness of words (Adams, 1990; Snider, 1995). It is important to determine that children have acquired proficiency in the larger units, including words and

syllables, before proceeding to phonemes. Research has shown that young children can be taught to segment sentences into individual words (Fox & Routh, 1975). Awareness of words can be assessed by asking a child to clap once for each word in the sentence (Sawyer, Dougherty, Shelly, & Spaanenburg, 1990).

The conscious appreciation of syllables may be more difficult than that of words because syllables are further removed from meaning and are closer to phonemes (Adams, 1990). Syllable segmentation is consistent with the suggestion that it is an important reading ability (Blachman, 1984). Results obtained by Blachman with a group of kindergartners and first graders indicated that the ability to tap syllables was a correlate of reading ability. Among the first graders the correlation was no longer significant. Adams (1990) feels this suggests that the ability to attend to syllables is a rudimentary and early developing skill. Compound words (e.g., *boxcar* becomes *box* and *car*) should be segmented before syllables (Edelen-Smith, 1997).

According to Treiman (1985), an intermediate step between syllable awareness and phoneme awareness may be awareness of onsets and rimes (e.g., the word *sat* becomes /s/ and /at/, and the word *target* becomes /t/ and /arget/). Bradley and Bryant (1985) found that this type of activity could be effectively taught to children. Yet, while onset and rime tasks are important dimensions of phonological awareness, performance on these tasks has a lower correlation to reading than does performance in segmentation and blending (Stanovich, Cunningham, & Cramer, 1984; Yopp, 1988), and they receive less attention in the literature.

The more difficult task of phoneme awareness should be delayed until syllable segmentation has been mastered (Liberman, Shankweiler, Fischer, & Carter, 1974).

Edeleman-Smith (1997) offers a scope and sequence of skills to use when planning phonemic awareness instructional activities: isolated sound recognition, phoneme counting, sound synthesis, sound-to-word matching, identification of sound positions, sound segmentation, letter-sound association, word-to-word matching and sound deletion.

Another principle in phonological awareness curricula development is the concept that fewer sounds should be introduced before more sounds. Edeleman-Smith (1997), for example, indicates the order should be CV (consonant-vowel), VC (vowel-consonant), then CVC (consonant-vowel-consonant). Words with four sounds are presented after the shorter ones can be segmented (Snider, 1995). In this sequence, words with initial or final blends are easier to segment than CVC words because they require the ability to segment within the onset or rime (e.g., the /tr/ in *trap*).

A growing body of research points to the importance of combining instruction in phonological awareness with knowledge of letter/sound correspondences (Bradley & Bryant, 1985; Byrne & Fielding-Barnsley, 1993; Hatcher, Hulme, & Ellis, 1994; MacDonald & Cornwall, 1995; Richgels, Poremba, & McGee, 1996; Stahl & Murray, 1994; Wagner & Rashotte, 1993). These researchers feel that auditory tasks should be presented at the same time letter sounds are taught in isolation.

When introducing sound/symbol correspondences order and rate must be considered (Snider, 1995). According to Carnine and associates (1990), the most useful letters (a, m, t, s, i, f) are presented first, letters that have visual or auditory similarity are

introduced separately (e.g., b and d), and instruction in lowercase letters precedes that of uppercase letters. Snider (1995) suggests that sounds be presented slowly and reviewed often, with adequate time for mastery. Reading print should begin, she believes, when students are able to easily segment CVC (i.e. consonant, vowel, consonant) words auditorily and when they know enough letters and their corresponding sounds to make real words. In emphasizing the importance of an understanding of the alphabetic principle, Adams (1990) concludes, "Faced with an alphabetic script, the child's level of phonemic awareness on entering school may be the single most powerful determinant of the success he or she will experience in learning to read" (p. 304).

Context and rate must be considered in developing a child's phonological understanding. If only awareness of phonological language structure is measured and taught, a basic level of phoneme awareness may be missed (Jerger, 1996). A child who not only hears the critical differences in sounds such as /s/ and /z/, /d/ and /t/, and vowels, but also perceives them at the rate and in the context of conversational speech, can benefit from other people's conversation as a self-teacher. According to Jerger, while most children begin to develop this skill in their preschool years, for various reasons (e.g., intermittent mild hearing loss, recurrent interrupted attention to conversations, or infrequent adult/child interaction) some do not. These children may miss many of the nuances of language, such as verb tenses, plurals, and rhymes, and the rules for decoding may not make sense. The development of accurate, automatic, and fluent word identification along with phonological awareness is critical to reading success (Adams, 1990; Blachman, 1994; Ehri, 1991; Lyon, 1997). Methods that employ sentences, such as

songs, poems, and nursery rhymes, help children with a restricted phonemic inventory acquire phoneme awareness at a conversational rate and in a relatively normal context (Jerger, 1996).

Based upon understandings of developmentally appropriate activities for young children (National Association for the Education of Young Children, 1986), Yopp (1998) offers general recommendations for developing phonemic awareness activities. The teacher should avoid drill and rote memorization, and instead should keep a sense of fun and playfulness (Edelen-Smith, 1997; Griffith & Olson, 1992; Juel & Meier, 1999; Tunmer, Herriman, & Nesdale, 1988; Watkins & Bunce, 1996; Yopp, 1992; Yopp, 1995). According to Yopp (1998), the more game-like and amusing the activities, the better. Children need to develop positive feelings toward learning. Group settings that encourage interaction should be used for learning (NAEYC, 1986). Children are social and learn from one another, and language play is very appropriate in a social setting.

Children are curious. Their experimentation and curiosity about language should be encouraged. The teacher should allow for individual differences in the children's understanding. There is great variation among children: some will catch on to the activities quickly while others will not. The tone should be kept informal and fun. Phonological activities are meant to be informative, not diagnostic or evaluative. Activities should be brief, lasting no more than 15 to 20 minutes, and they should fit the context of the immediate environment (Edelen-Smith, 1997).

Implications for Parent/Child Phonological Activities

The implication for phonological activities as a parent/child activity come from several sources: theories of child development, data relating socioeconomic status and academic achievement, studies of the influences of home environment on children, and research on parents and teachers as partners.

Theories of Child Development: Piaget and Vygotsky

Piaget postulated that two basic inherited tendencies govern mental functioning: organization and adaptation (Biehler & Snowman, 1986). Organization refers to the capacity to combine thinking processes into logically interrelated systems. This allows for gradual adaptation of an individual to the environment. Adaptation is achieved by 1) assimilation (perceiving and interpreting experiences so they fit into an existing understanding or scheme) or 2) accommodation (changing the existing scheme to include the experience). Piaget believed that equilibrium, an innate feeling of satisfaction with the comprehension of external events, drives children to actively pursue cognitive adaptation (Dworetzky, 1990). According to Biehler and Snowman (1986) this struggle to resolve discrepancies between one's understanding and one's observations of the world forces a child upward through stages of cognitive development.

On the basis of his work, Piaget proposed that children proceed through four developmental stages: sensorimotor (birth to two years), preoperational (age two to seven years), concrete operational (age seven to eleven years), and formal operational (eleven

years and older) (Biehler & Snowman, 1986). Although the sequence itself is the same for each child, the rate through which children pass through each stage may vary. Individual differences in rate of passage are due in part, Piaget theorized, to the factors of heredity and environmental experience. While heredity cannot be changed, the details of a child's cognitive development can be altered given a differing amount and quality of environmental experiences. A child with a mother who is highly communicative and who provides a stimulating environment will progress through the sensorimotor stage slightly faster than would be expected (Chazan, 1981). Sprinthall and Sprinthall (1987) believe that with good quality instruction, children can be helped to refine their developing schemes, or patterns of thought and behavior, at a somewhat quicker pace.

In recognizing children's ability to actively construct their own understanding of concepts, Piaget's theoretical perspective emphasized the children's need to interact with people, act on objects, and reflect upon their own experiences (Bredekamp & Copple, 1997). In applying Piaget's theory of cognitive development in the classroom, it is essential to remember several points (Biehler & Snowman, 1986). Children need many opportunities to learn on their own. Activity and direct experience are crucial. Learning experiences should be presented in sequence from simple to difficult, from classification of single attributes to complex. Children need social interaction, and can learn from one another.

Vygotsky based his social-cognitive theory on several basic principles (Bodrova & Leong, 1996). Vygotsky believed that rather than passively reproducing what is presented to them, children create their own cognitive understandings. This cognitive construction

occurs primarily through manipulation of physical objects (Ginsberg & Opper 1988) and is always influenced by social interactions (Bodrova & Leong, 1996). Vygotsky believed that not only does the child's developmental level affect learning, but that the child's learning can affect his development. New information must be presented at a level and rate that will guide the child into further development. Vygotsky also argued that it is language that makes thought possible. As children talk, they think. Speech allows the child to imagine and to create and share new ideas. A child's speech is an essential part of problem solving. Much of a child's comprehension first occurs in communication with other people (Bredenkamp & Copple, 1997). Language, Vygotsky theorized, is both instrumental in the development of cognition and is also a component of the cognitive process (Bodrova & Leong, 1996).

A significant aspect of cognitive development, according to Vygotsky, is related to what he termed the zone of proximal development, or ZPD (Bodrova & Leong, 1996). This zone is a learning continuum of behaviors or maturations that is bounded by an upper level of the maximum the child can reach with help (assisted performance) and a lower level of what the child can do alone (independent performance). As the child attains increasingly higher levels of thinking, a new level of assisted performance emerges. The ZPD shifts along with the new development, and the cycle is repeated over and over again as the child, with time, becomes capable of learning more and more. Vygotsky believed that any social action (e.g., with adults, with peers as equals, with imaginary friends, or with children at different developmental levels) would assist the child in performing on a higher level of a ZPD (Newman & Holzman, 1993).

Vygotsky maintained that social context plays a primary role in the acquisition of mental processes (Bodrova & Leong, 1996). Children learn by sharing, or interacting with others. It is only after a shared experience that a child can internalize and use the learned mental process independently. An activity cannot be shared, and no learning will occur, unless all participants are mentally engaged, and the learner is active. Participants must communicate with each other with rich verbal, written, or other kinds of exchanges to create the highest level of assistance possible. It is language and interaction that produce the shared experience.

The most common occurring interaction in direct teaching is the expert-novice interaction, where it is the expert's responsibility to support and direct the novice in acquiring the learning that would normally be beyond a child's ability (Bodrova & Leong, 1996). Informal expert-novice interactions can include the interchange of children and parents or siblings (Rogoff, 1990). Experts can provide "scaffolding" to help direct and nurture a child's cognitive development to a higher level (Wood, Bruner, & Ross, 1976). Adults use scaffolding when they help each other develop different cognitive skills or ways of thinking (Dworetzky, 1990). The task itself is not changed with scaffolding, but it is made initially easier with assistance (Bodrova & Leong, 1996). As the learner is able to take more responsibility for learning, the assistance gradually decreases. The task of the expert is to time the gradual removal of all scaffolding in order to strengthen the child's successful independent performance of the desired behavior. Responsibility for performance is transferred to the child as the child learns (Bruner, 1983).

Socioeconomic Status and Academic Achievement

Certain groups of children, including those growing up in poverty, exhibit a disproportionate amount of reading problems (Snowe, 1998). Children from families with a low socioeconomic status are at great risk for having sub-average levels of academic achievement (Renchler, 1993; Walker, Greenwood, Hart, & Carta, 1994). Reading acquisition of children raised in poverty is substandard throughout both primary and secondary grades (Gottlieb, Alter, Gottlieb, & Wishner, 1994; Kozol, 1991; Schorr, 1988). Juel (1988) found that students of lesser socioeconomic status scored lower on standardized assessments in listening comprehension and school language when tested at the beginning and end of first grade. Children of impoverished families have been found to be behind in educational attainment as early as pre-school age, preceding entry into formal educational experience (Bowey, 1995; Juel, 1988; Lonigan, Burgess, Anthony, & Barker, 1998).

The depressed academic scores found in children of lower socioeconomic status may be attributed to a number of sources. Family stress and disorganization are related negatively to children's literacy acquisition, and decrease the family's capacity to contribute to its children's academic success (Snow, Barnes, Chandler, Goodman, & Hemphill, 1991). Snow et al. (1991) suggest that financial stress, in the form of unemployment or underemployment, and psychological stress, evidenced in the forms of interpersonal conflict, illness, and personal dangers, are both serious problems that affect low-income families.

Family beliefs, attitudes, and values among low socioeconomic households have been researched. For example, Datcher-Loury (1989) concluded from her study of low-income black children that differences in family behavior and attitudes have substantial long-term effects on children's academic performance. Snow (1983) believes that minority families and families with low socioeconomic status are less likely to use decontextualized (i.e., abstract and remote) communication in the home and are more likely to use a more direct form of conversation. The development of decontextualized language skills, which are necessary in order to succeed in school, relies heavily on home experiences, Snow (1983) maintains.

Hart and Risley (1992) found in higher socioeconomic families, parents were more likely to encourage their children to talk by asking questions and by repeating and elaborating on the children's own topics. Children who have been read to and who have experienced hearing language in abstract contexts are better prepared for formal education (Snow, 1983). Duncan (as cited in Cohen, 1993) found an average discrepancy of 9.1 points between children who lived in poverty their first five years and those who did not. When examining three parent factors (amount of parent activity, parents' performance as social partners with their children, and contentive quality of parents' utterances), Hart and Risley (1992) found that the correlation with IQ was highly significant ($r = .63$).

From their analysis of parent-kept diaries, the National Reading Research Center (1996) found that parents' interactions with their children were guided by one or more of their beliefs on literacy: literacy as 1) a source of entertainment, 2) a set of skills to be taught, and 3) an integral component of everyday life. Middle-income families reported

that they engaged in activities consistent with the literacy as a source of entertainment view (e.g., joint reading, independent interaction with print). These families employed a more playful approach in providing opportunities for literacy learning. When supplying and interacting with literacy materials, they encouraged children to construct their own understandings. Low-income families, in comparison, participated in fewer literacy activities overall, and tended to approach literacy activities as a method to teach skills (e.g., flashcards, reciting the alphabet). According to the National Reading Research Center (1996), many low-income families emphasized home literacy activities that were more structured and skill-based.

Home environment

It is widely believed that parents play a key role in their children's reading development (Rasinski & Fredericks, 1989; Snowling, 1996; Strickland & Morrow, 1989). Children of families whose parents are involved in their child's literacy learning demonstrate greater gains than other children, and parents increase in their confidence and sense of responsibility for their child's education as they become more involved (Schmidt, 1995). In a review of research, Wang, Haertel, and Walberg (1993) found that home environment was one of the most important influences on academic achievement.

Although children begin their formal education with varying degrees of phonological awareness, a majority of children enter kindergarten lacking phonemic awareness (Yopp, 1995). The level of metalinguistic awareness that can be realized by instruction in school depends in part upon the degree of phonological awareness that a

child develops in preschool years. When teaching kindergarten children onset and rime, Peterson and Haines (1992) found the results were dependent upon the children's prior ability to segment words. Byrne and Fielding-Barnsley (1993) compared a group of first graders who were taught phonemic structures with a group which was not. Those from either group which scored the highest on measures of word identification, decoding, and spelling were those who had entered school with advanced knowledge of phonological processes. Environmental differences, such as degree and quality of exposure to language at home, may be a reason for the discrepancy of entering skills (Juel, Griffith, & Gough, 1986). Young children who experience homes filled with interactions with print (e.g., language play, letter games, and being read to) have higher levels of phonological awareness (International Reading Association, 1998) and enter school ready to learn (Pearson & Dunsmore, 1998).

Entering first-grade oral language skills contribute to phonological awareness (Juel, Griffith, & Gough, 1986). Caregivers who create high levels of interaction between themselves and children, who allow for one-to one conversations with children, and who provide shared book readings and related activities are instrumental in the development of literacy (Rush, 1999; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991). Snow, Barnes, Chandler, Goodman, and Hemphill (1991) found that time spent in the home with adults resulted in higher scores on vocabulary and reading comprehension measures. Snow and colleagues believe that the results reflect the challenging and informative dialogue possible when adult and child interact. Research has shown it to be essential to provide child/adult interactions that promote language development, and that facilitate the

acquisition of early literacy skills (Anderson, Hiebert, Scott, & Wilkinson, 1985; Chall, Jacobs, & Baldwin, 1990; Snow & Tabors, 1996).

Children who come from homes which do not support school literacy learning must depend totally on schools to develop their reading skills and to avoid reading failure (Bergeson, Ciardi, & Miller, 1998). According to their report, children who do not receive help from their families to improve their language skills before age six come to school ill-prepared to learn.

Parents and teachers as partners

Understanding the parents' perspectives on literature and their home experiences are a basis for building a positive parent/teacher partnership (National Reading Research Center, 1996). Teachers and parents need to be willing to learn from each other and integrate literacy practices from each setting in order to create a nurturing environment for reading acquisition. Teachers should share with the parents what skills the children are mastering in school, and how literacy-based activities can enhance the skills. The National Reading Research Center (1996) suggests that relating the literacy activities to the key components of reading may help low-income parents widen their perspective on home literacy to include both a skills and an entertainment perspective.

Parental modeling of reading has been found to be associated with gains in student achievement (Pearson & Dunsmore, 1998). Teachers must serve as models to the parents, demonstrating the attributes of a motivating literacy environment, just as teachers want parents to model with their children (National Reading Research Center, 1996). Parents

need to be provided with strategies and information to help their children become successful readers (International Reading Association, 1998). Effective tools must be devised for involving parents help their children read (Reutzel & Fawson, 1990).

Many children have a need for more than the short-term training of the school setting.

Empirically supported, home-based interventions are required in order to provide explicit phonological awareness activities to the parents (Rush, 1999).

From a ten year longitudinal study focusing on early differences in family socioeconomic levels, child language production, and IQ, Walker, Greenwood, Hart, and Carta (1994) suggested that early cumulative experiences (e.g., less exposure to diverse vocabulary through parental attention and talking, and prohibition from talking more often) appeared to be related to lower school performance. They found lower school performance related to these experiences to be little influenced by later schooling. Implications for prevention, according to Walker and colleagues (1994), would include improved prediction of elementary school success and systematic language-related interventions in the home and in the school. Children would benefit from explicit phonological awareness interventions in their homes (Rush, 1999; Walker et al., 1994).

Phonological awareness, one of several phonological processing skills necessary for reading acquisition, has been shown to be a strong indicator of reading success (Adams, 1990; Smith, Simmons, & Kameenui, 1995). Research suggests that with explicit and systematic instruction, children can acquire phonological awareness (Blachman, 1984; Cunningham, 1990; Jerger, 1996; Lundberg, Frost, & Petersen, 1988). In order to benefit optimally from school instruction, children must develop a strong basis

in prerequisite language and cognitive skills in their home environments (Snow, 1998).

Homes in which oral communication is encouraged and where literacy activities are provided are instrumental in the development of reading (Rush, 1999; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991). Parents, with the support of teachers and research-based interventions, can help provide the effective, systematic language-related activities their children need in order to realize reading success (Rush, 1999; Snowling, 1996; Walker, Greenwood, Hart, & Carta, 1994).

CHAPTER 3

Procedures

Purpose

Phonological awareness is essential in learning to read an alphabetic language. Children who do not acquire an early awareness of words and phonemes are at a disadvantage in acquiring reading. Students entering school with poor phonological skills may continue to evidence poor linguistic skills throughout their school years, and may experience frustration in reading and low self-esteem, even into adulthood. The purpose of this project is to create a curriculum to enhance reading acquisition in young children. The interactive video tape curriculum that has been developed contains lessons that promote phonological awareness at four levels of difficulty: word, syllable, onset-rime, and phoneme. The lessons are intended to be viewed and practiced by parent and child at home, and are designed to give the parents skills and confidence as they support their child's development of phonological awareness.

Need

At Harrah Elementary School, where this curriculum is to be implemented, the children have a clear need of systematic and explicit phonological awareness instruction for varied reasons. Harrah Elementary is located in the middle of an economically depressed area; approximately 90 percent of the students that attend the school qualify for free or reduced lunch. Research suggests that children with parents of lower

socioeconomic status are at great risk for having sub-average levels of academic achievement (Renchler, 1993; Walker, Greenwood, Hart, & Carta, 1994).

Results of recent testing have shown children at Harrah Elementary to be academically low when compared with students nationally. For example, the Iowa Test of Basic Skills (1999) showed 46 percent of Harrah third graders in the bottom quarter, while only 27 percent met or exceeded the national percentile of 50 percent. Curriculum Based Measurement Reading scores (1999) indicated that Harrah Elementary first grade students performed in the lower third of students nationwide. The assessment showed that at the end of first grade, Harrah students were reading 23 words per minute as opposed to the national average of 71 words per minute. Statewide, on the 1998 Washington Assessment of Student Learning, 30.2 percent of Harrah fourth grade students met the standard, compared to a total of 55.6 percent of the students across the state.

The Language Assessment Scale was recently administered to all exiting kindergarten children at Harrah to determine their skill level in the English language. Although only 15 - 20 percent of the school population is Hispanic (not all of whom are monolingual), 40 percent of the five and six year olds scored in the non-English speaker level. Of the remaining students, 31 percent scored in the limited-English speaker category, and 29 percent scored as fluent (proficient) English speakers. From these results it can be concluded that 71 percent of the children ready to enter first grade at Harrah Elementary would be considered Limited English Speakers. As borne out in research,

children with low language skills experience difficulties when learning to read (Bergesen, Ciardi, & Miller, 1998).

It is not only the students at Harrah Elementary School that may exhibit educational needs. Parents of low socioeconomic households are more likely to use direct forms of communication, much of which relies on the use of text (Snow, 1983). Literacy activities in these homes are more structured and skill-based (e.g., flashcards, reciting the alphabet) and parents are less likely to employ a playful approach in literacy learning where children are encouraged to construct their own understandings (The National Reading Research Center, 1996). Children who have experienced hearing language in abstract contexts are better prepared for formal education (Snow, 1983).

Assisting families to relate effective strategies and literacy activities to the key components of reading may help low-income parents widen their perspective on home literacy (International Reading Association, 1998; Reutzel & Fawson, 1990). In addressing both the needs of the low language and low reading abilities of the students, and the literacy focus of low income families, a home-based interactive video curriculum with simple, explicit phonological activities is indicated.

Development

Research literature related to phonological awareness, beginning reading acquisition, and parental involvement in children's literacy development was read, evaluated, and summarized. A positive relationship between phonological awareness and learning to read was indicated from this review, and a correlation between parental literacy

activities and children's language and reading acquisition was found. Studies suggesting the existence of a developmental sequence of phonological skills were examined.

Activities that promote phonological awareness were identified, read, and evaluated for the level of difficulty they addressed and for ease of implementation in a home setting. Considerations included amount of parental skill and literacy knowledge required and necessity of supplies or props to complete the activities.

Parents and children were recruited and video taped. A variety of parents were chosen to participate: mothers, fathers, professionals, and those who work in the home. Family size varied, and children's ages ranged from age three to seven years. The phonological activities in which the parents and children participated were from one to two minutes in length.

The videos clips were sorted, compiled onto tapes of like difficulty level, and edited. Supporting activities and extensions were developed that were designed to accompany the videos into the students' homes, to be completed by parent and child, and to be returned to school.

Planned implementation and assessment

The video curriculum will be implemented in a first grade classroom at Harrah Elementary School, where an initial screening of students' understanding of phonological awareness will be administered. The assessment used will include items reflecting a hierarchy of metalinguistic skills: awareness of words, syllables, onset-rime, and phonemes. When a child's score indicates incomplete knowledge of one of the skills, a

more thorough pre-assessment will be administered. If the pre-assessment also indicates difficulty on that level, a video tape and activity sheet which address the competency will be sent home with the child to view and practice. For example, if the screening measure shows a child to have poor understanding on the word level, the pre-assessment on that level will be administered. If pre-assessment scores still indicate difficulty, a video tape and activity sheet which address the skill of word awareness will be given to the child to take home.

The video tapes, each containing two or three different parent-child activities, target a specified level of phonological awareness. For example, a video to enhance word knowledge might include practice with clapping words in a sentence and also another segment with counting the words in a sentence. The parent-led video activities include sound teaching instruction such as modeling and guided practice, the presentation of fewer sounds before more sounds, and sequentially introduced skills. The curriculum is designed to be interactive: after watching a brief one to two minute segment of the video, the viewers are directed to turn off the video and complete a corresponding activity sheet. The activity sheet both reflects and extends the video tape segment, encouraging parent and child to duplicate the observed activity and asking them to complete a checklist of extensions. When the sheet is finished, the parent and child are directed to return to the video for another related, yet slightly more difficult activity. An activity sheet again follows to encourage parent-child communication and interaction in the home.

When the parent and child have viewed the video and have completed the activity sheets, they are instructed to return both to the teacher. A post-test is administered to

assess progress. If the child still has difficulty with the skill, a second, different yet related video with activity sheet is sent home to view and practice. The teacher may also refer to the suggested reading section for books which include phonological activities that can be implemented in the classroom. When sufficient progress has been made (as measured by the post-test) the teacher pre-tests the child on the next level of observed difficulty (as shown by the screening measurement) and repeats the process with the appropriate video(s).

Chapter 4

Promoting Phonological Awareness
in Young Children
through At-Home Activities:
A Video Curriculum

by

Kathleen A. Kwak

July, 1999

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Foreword

A growing body of evidence suggests phonological awareness is a crucial skill for the acquisition of reading and that phonological awareness is highly correlated to future reading achievement (Adams, 1990; Torgesen, Wagner, & Rashotte, 1994). An awareness of sounds is important in our alphabetic language because beginning readers must use the alphabetic code (the discernment that words can be broken down into smaller parts and that these parts are represented by symbols) in order to make sense of written words (Snider, 1995). Deficits in phonological awareness predict reading difficulties and have a negative affect on reading acquisition (Torgesen, Wagner, & Rashotte, 1994).

Phonological skills should be emphasized early, during beginning reading instruction (Adams, 1990). The acquisition of reading is not confined to school settings, however, but is a lengthy process, beginning very early in development (Lyon, 1997; Snow, 1998). In order to benefit optimally from primary school instruction, children must develop a strong basis in prerequisite language and cognitive skills in their home environments (Snow, 1998). This curriculum was created to provide practical, research-based lessons that the teacher can send home with students to increase their developing phonological awareness.

Kathleen A. Kwak

Curriculum Contents

This manual contains curriculum instructions, phonological awareness lessons on video tape, activity sheets designed to be used interactively with the video lessons, a screening assessment, pre- and post-assessments, and a bibliography containing further references. The lessons are organized around a hierarchy of difficulty levels, listed from easiest to hardest: awareness of words, awareness of syllables, awareness of onset-rimes, and awareness of phonemes. Each section of the manual addresses one of the levels. Included in each section is a description of the phonological level, pre- and post-assessments, and a sampling of phonological awareness activity video tapes and activities that are intended to be viewed and completed at home.

The video taped lessons are designed to meet a variety of parenting skills: instructions are presented both orally and in written form, the oral activities are simple and brief, few if any props are needed, the activity sheet reflects the skills modeled on video, and a variety of settings can be used. The videos provide explicit modeling and guided practice. Skill practice and communication between parent and child is encouraged through the interactive design of video and activity sheets.

The screening assessment, located in the appendix, is designed to identify those students who may be low in a level of phonological awareness. The pre-tests and post-tests are used to show growth in the phonological skills after instruction and practice.

*Note: Consent for sharing the enclosed videos has been obtained from the participants. For further information contact:

Kathy Kwak
Harrah Elementary School
Harrah, WA. 98933

Curriculum Instructions to the Teacher:

1. Administer the screening test. Incorrect answers on four or more items in any level (word, syllable, onset-rime, or phoneme) indicate that the student should be considered for a pre-test at that level.
2. Administer the pre-test specific to the level of phonological awareness indicated by difficulty on the screening assessment. If the screening suggested low skills on more than one level, select the easiest level to evaluate and instruct first (e.g., word level before syllable level, syllable before onset-rime, etc.).
3. Send home the first video and activity sheet of the targeted phonological awareness level, along with a note of purpose and instruction to the parents. The teacher should explain that the student is to keep the packet at home for three days, watch it and practice the skills shown at least three times with his/her parent(s), complete the activity sheet, and return the video and completed activity sheet to the teacher.
4. Administer the post-test specific to the target level of phonological awareness.
5. If further instruction and practice are indicated, send home the second video and activity sheets (as they are developed), using the same procedure as described above.
6. Administer the post-test. If the student is still having difficulty on that level, refer to the suggested reading section for further reading and activities.
7. If the student shows sufficient growth at that level, administer the pre-test on the next level as indicated by the screening assessment. Repeat the above procedure as needed.

Word Level

The task of segmenting sentences into words is rudimentary. At an early age, children are able to comprehend that sentences and phrases are comprised of separate, distinct words (Fox & Routh, 1975; Sawyer, Dougherty, Shelly, & Spaanenburg, 1990). In a study by Fox & Routh (1975) 3 year old children were able to identify the words in the majority of sentences given to them.

The activity packets in this section include phonological tasks in which the children are asked to demonstrate:

- Video 1: segmentation of sentences into words
enumeration of words in a sentence
- Video 2: segmentation of phrases into words
identification of first, middle, and last words in a phrase

WORDS: VIDEO ONE ACTIVITY SHEET

Child _____

Parent/guardian _____ Date _____

Turn on the video and watch the first segment. When you are told to stop the video, do the following activity with your child.

Section A

Have your child watch and listen to you while you say the following sentences and clap once for each word:

_____ **I run.**_____ **You are nice.**

Now ask your child to clap along with you as you say these sentences:

_____ **I play.**_____ **I smile.**_____ **I am nice.**_____ **I like to run.**_____ **I like to run fast.**

Tell your child "I am going to say some words. You repeat them after me and clap each time you say a word." Have your child repeat and clap these words:

_____ **I play.**_____ **I have a pet dog.**_____ **We jump.**_____ **I have a pet cat.**_____ **We jump high.**_____ **My pet is red.**_____ **You are smart.**_____ **My red pet is big.**_____ **I am so smart.**_____ **My big red pet is too big.**_____ **I have a pet.**_____ **He is as big and red as a barn!**

Please put a check mark by the sentences you clapped and then try some sentences of your own. Use only one syllable words (for instance: some, clap, up, kick) and not words with more (for instance: under, sandwich, alligator). How did your child do?

Turn the video back on and watch. Listen for instructions.

Section B

Take some time to have your child gather some markers (rocks, coins, or some other small items) to use for this activity. You will need 6 for each child. Then put the markers (rocks, etc.) in a straight line in front of each person on a table. Follow these instructions:

Tell your child to listen and watch first. Say the sentence "*I eat.*" Say it again slowly and move a marker away from you each time you say a word. You should have moved two markers. Count the markers and say "*Two. I said two words.*" Have your child watch one more time while you say the sentence "*I like corn.*" Repeat the sentence while moving the markers, count the moved markers, and say "*Three. I said three words.*"

Now have your child try it. Say the sentence first, then repeat it slowly as your child moves the markers. Have your child count the markers and tell how many words there are in the sentence. Use these sentences:

_____ **I smile.**

_____ **I like pigs.**

_____ **I like cows.**

_____ **I like green cows.**

_____ **Some cows are nice.**

_____ **Some green cows are big.**

_____ **Some big green cows are mean.**

_____ **I like big, green, mean cows.**

_____ **Some cats are red.**

_____ **The red cats are nice.**

Put a check mark by the sentences you used. Continue to make up your own sentences. Remember to use one syllable words only. If your child is having difficulties, use shorter sentences. You may want to have your child watch the video again for more practice. Continue to work with your child on clapping, moving markers, and counting words until he/she is comfortable with the skill.

Please have your child return the video and activity sheet to me on _____. Thank you.

PHONOLOGICAL AWARENESS

PRE-TEST: WORDS

Name _____

Date _____ Score _____

Awareness of Words

A. Clapping

Have the student watch and listen while you say the following sentences. Repeat the sentences, clapping once as you say each word:

We play.....We play. (clap twice, once with each word)

We play games.....We play games. (clap three times, once with each word)

We play fun games.....We play fun games. (clap four times)

Say the above again. Have the student repeat the sentences and clap with you as you say them the second time.

Ask the student to repeat the following sentences after you while clapping once for each word. Record the number of claps for each sentence.

	Number of claps	Number possible
1. We play.	_____	(2)
2. We play tag.	_____	(3)
3. Jump with me.	_____	(3)
4. She is my friend.	_____	(4)
5. We like to slide.	_____	(4)
6. We can run so fast.	_____	(5)
7. My dog runs, too.	_____	(4)
8. He is fun.	_____	(3)
9. Can you see my ball now?	_____	(6)
10. Catch me!	_____	(2)

B. Counting

Put six markers on a flat surface in a row in front of you and six in front of the student. Have the student watch and listen while you say the following sentences. Repeat the sentences, moving one marker away from you as you say each word:

We play.....We play (move two markers, one for each word)

We play at home.....We play at home (move four markers, one for each word)

You are nice.....You are nice. (move three markers)

Say the above again. Have the student say the sentences and move their own markers as you repeat the activity.

Ask the student to repeat the following sentences after you while moving one marker for each word. Record the number of markers moved for each sentence.

	Number of markers moved	Number possible
1. Run and hide.	_____	(3)
2. Find me.	_____	(2)
3. Where are you?	_____	(3)
4. Watch us jump.	_____	(3)
5. I can not jump high.	_____	(5)
6. My dog is sick.	_____	(4)
7. He can not play right now.	_____	(6)
8. Is he sick?	_____	(3)
9. He can play now.	_____	(4)
10. We will find the dog.	_____	(5)

Total Correct _____

PHONOLOGICAL AWARENESS

POST-TEST: WORDS

Name _____

Date _____ Score _____

Awareness of Words

A. Clapping

Have the student watch and listen while you say the following sentences. Repeat the sentences, clapping once as you say each word:

We play.....We play. (clap twice, once with each word)

We play games.....We play games. (clap three times, once with each word)

We play fun games.....We play fun games. (clap four times)

Say the above again. Have the student repeat the sentences and clap with you as you say them the second time.

Ask the student to repeat the following sentences after you while clapping once with each word. Record the number of claps for each sentence.

	Number of claps	Number possible
1. We play.	_____	(2)
2. I can sing.	_____	(3)
3. Sing with me.	_____	(3)
4. I like to eat.	_____	(4)
5. We want to run.	_____	(4)
6. I like to play tag.	_____	(5)
7. My cat is brown.	_____	(4)
8. He is fun.	_____	(3)
9. Can you see my cat now?	_____	(6)
10. Catch me!	_____	(2)

B. Counting

Put six markers on a flat surface in a row in front of you and six in front of the student. Have the student watch and listen while you say the following sentences. Repeat the sentences, moving one marker away from you as you say each word:

We play.....We play. (move two markers, one for each word)

We play at home.....We play at home. (move four markers, one for each word)

You are nice.....You are nice. (move three markers)

Say the above again. Have the student say the sentences and move their own markers as you repeat the activity.

Ask the student to repeat the following sentences after you while moving one marker for each word. Record the number of markers moved for each sentence.

	Number of markers moved	Number possible
1. Stop and go.	_____	(3)
2. Watch out!	_____	(2)
3. Where are you?	_____	(3)
4. I will swim.	_____	(3)
5. I can not swim fast.	_____	(5)
6. How big is he?	_____	(4)
7. She can not come right now.	_____	(6)
8. She is nice.	_____	(3)
9. My arms are long.	_____	(4)
10. I have two good friends.	_____	(5)

Total Correct _____

Syllable Level

Segmenting at the syllable level is the next developmental level, and compound words are the easiest words to segment (Fox & Routh, 1975). The conscious appreciation of syllables may be more difficult than that of words because syllables are further removed from meaning and are closer to phonemes (Adams, 1990). Studies have shown that syllable segmentation is a correlate of reading ability (Blachman, 1984).

The activity packets in this section include phonological tasks in which the children are asked to demonstrate:

- Video 1: segmentation of words into syllables
enumeration of syllables in a word
- Video 2: blending syllables into words
segmenting words into syllables

SYLLABLES: VIDEO ONE ACTIVITY SHEET

Child _____

Parent/guardian _____ Date _____

Turn on the video and watch the first segment. When you are told to stop the video, do the following activity with your child.

Section A

Have your child watch and listen to you while you say the following words and clap once for each syllable:

_____ **run**

_____ **hug**

Now ask your child to repeat these words and clap along with you:

_____ **grab**

_____ **mouse**

_____ **cowboy**

_____ **doorknob**

_____ **animal**

Tell your child, "I am going to say some words. You repeat them after me and clap each time you say a syllable." Have your child repeat these words and clap:

_____ **kite**

_____ **telephone**

_____ **dime**

_____ **sun**

_____ **dictionary**

_____ **salmon**

_____ **goodbye**

_____ **encyclopedia**

_____ **magnificent**

_____ **football**

_____ **tree**

_____ **rooster**

_____ **toenail**

_____ **somersault**

_____ **November**

_____ **computer**

_____ **yellow**

_____ **secretary**

Please put a check mark by the words you clapped and then try some words of your own. Try using names, colors, states, cities, etc. You might have your child tell you some words so you can clap, too. If your child has difficulties with the longer words, practice on shorter ones first. How did your child do?

Turn the video back on. Listen and watch as Michaela and her Mom count syllables.

Section B

Take some time to have your child gather a marker (rock, coin, or some other small item) to use for this activity. You will need one for you and one for your child. Put the markers (rock, etc.) on the "Hearing Sounds and Words" activity sheet on the zero space. Follow these instructions:

Tell your child to listen and watch first. Say the word "*hug*." Say it again slowly and move a marker away from you. You should have moved one space. Point to the number "1" and say "*One. I said one syllable. Hug.*" Have your child watch one more time while you say the word "*raindrop*." Repeat the word while moving the marker two spaces, point to the number two, and say "*Two. I said two syllables. Raindrop.*"

Now have your child try it. Say the word first, then repeat it slowly as you and your child move the markers. Have your child point to the number in the space and tell how many syllables there are in the word. Use these words:

_____ **ten**

_____ **Mississippi**

_____ **mystery**

_____ **checkbook**

_____ **advertisement**

_____ **kitten**

_____ **baby**

_____ **national**

_____ **flag**

_____ **gingerbread**

_____ **nationality**

_____ **children**

_____ **submarine**

_____ **exterminator**

_____ **photographer**

Put a check mark by the words you used. Now having just your child move his/her marker, continue with your own words. Remember, if your child is having difficulties, use shorter words. You may want to have your child watch the video again for more practice. Continue to work with your child on clapping and counting syllables until he/she is comfortable with the skill.

Please have your child return the video and activity sheet to me on _____. Thank you.

Hearing Sounds and Words Activity Sheet

How many sounds do you hear? Count all the sounds.
Move a marker up the page to show how many sounds you hear.

5

4

3

2

1

0

PHONOLOGICAL AWARENESS

PRE-TEST: SYLLABLES

Name _____

Date _____ Score _____

Awareness of Syllables

A. Clapping

Have the student watch and listen while you say the following words. Repeat the words, clapping once as you say each syllable:

mop.....**mop** (clap once, once with each syllable)

cupcake.....**cupcake** (clap twice, once with each syllable)

television.....**television** (clap four times)

Say the above again. Have the student repeat the words and clap with you as you say them the second time.

Ask the student to repeat the following words after you while clapping once with each syllable. Record the number of claps for each word.

	Number of claps	Number possible
1. mop	_____	(1)
2. dog	_____	(1)
3. tiger	_____	(2)
4. funny	_____	(2)
5. telephone	_____	(3)
6. kindergarten	_____	(4)
7. Halloween	_____	(3)
8. summertime	_____	(3)
9. America	_____	(4)
10. hippopotamus	_____	(5)

B. Counting

Put one marker on a Hearing Sounds and Words Activity Sheet in front of you and one on an Activity Sheet in front of the student. Have the student watch and listen while you say the following words. Repeat the words, moving the marker away from you as you say each syllable:

mop.....**mop** (move the marker one space, for one syllable)

cupcake.....**cupcake** (move the marker twice, once for each syllable)

sandwiches.....**sandwiches** (move the marker three times, once for each syllable)

Say the above again. Have the student repeat the words and move their own marker as you do the activity.

Ask the student to repeat the following words after you while moving a marker on the Hearing Sounds and Words Activity Sheet, once for each syllable. Record the number of moves for each word.

	Number of moves	Number possible
1. puff	_____	(1)
2. little	_____	(2)
3. January	_____	(4)
4. hamburger	_____	(3)
5. encyclopedia	_____	(6)
6. football	_____	(2)
7. vacation	_____	(3)
8. jump	_____	(1)
9. teacher	_____	(2)
10. motorcycle	_____	(4)

Total Correct _____

Hearing Sounds and Words Activity Sheet

How many sounds do you hear? Count all the sounds.
Move a marker up the page to show how many sounds you hear.

5

4

3

2

1

0

PHONOLOGICAL AWARENESS

POST-TEST: SYLLABLES

Name _____

Date _____ Score _____

Awareness of Syllables

A. Clapping

Have the student watch and listen while you say the following words. Repeat the words, clapping once as you say each syllable:

mop.....**mop** (clap once, once with each syllable)

cupcake.....**cupcake** (clap twice, once with each syllable)

sandwiches.....**sandwiches** (clap three times)

Say the above again. Have the student repeat the words and clap with you as you say them the second time.

Ask the student to repeat the following words after you while clapping once with each syllable. Record the number of claps for each word.

	Number of claps	Number possible
1. up	_____	(1)
2. mine	_____	(1)
3. horsefly	_____	(2)
4. hello	_____	(2)
5. wintertime	_____	(3)
6. January	_____	(4)
7. anyone	_____	(3)
8. whenever	_____	(3)
9. America	_____	(4)
10. refrigerator	_____	(5)

B. Counting

Put one marker on a Hearing Sounds and Words Activity Sheet in front of you and one on an Activity Sheet in front of the student. Have the student watch and listen while you say the following words. Repeat the words, moving the marker one space away from you as you say each syllable:

mop.....**mop** (move the marker one space, for one syllable)

cupcake.....**cupcake** (move the marker two spaces, for two syllables)

sandwiches.....**sandwiches** (move the marker three spaces)

Say the above again. Have the student repeat the words and move their own marker as you repeat the activity.

Ask the student to repeat the following words after you while moving a marker on the Hearing Sounds and Words Activity Sheet, once for each syllable. Record the number of moves for each word.

	Number of moves	Number possible
1. sun	_____	(1)
2. sandwich	_____	(2)
3. December	_____	(4)
4. cucumber	_____	(3)
5. encyclopedia	_____	(6)
6. under	_____	(2)
7. somebody	_____	(3)
8. jam	_____	(1)
9. farmer	_____	(2)
10. alligator	_____	(4)

Total Correct _____

Hearing Sounds and Words Activity Sheet

How many sounds do you hear? Count all the sounds.
Move a marker up the page to show how many sounds you hear.

5

4

3

2

1

0

Onset-rime Level

Awareness of onsets (any beginning consonants of a syllable) and rimes (the vowel/s and any final consonants of a syllable) is an intermediate step between syllable and phoneme awareness. Treiman (1985) presented evidence that the awareness of syllable onsets is not only a different challenge, but it is also simpler than the awareness of individual phonemes.

The activity packets in this section include phonological tasks in which the children are asked to demonstrate:

- Video 1: blending of onset-rimes into words
segmentation of the onset of words
segmentation of the rime of words
- Video 2: alliteration
rhyming

ONSET-RIMES: VIDEO ONE ACTIVITY SHEET

Child _____

Parent/guardian _____ Date _____

Turn on the video and watch the first segment. When you are told to stop the video, do the following activity with your child.

Section A

Say the following words to your child. Pause between the onset (the first sound of the word) and the rime (the last sound). See if your child can guess what you are saying.

_____ f....ish	_____ s....unshine	_____ O....klahoma
_____ tr....ain	_____ a....lligator	_____ g....old
_____ n....ose	_____ bl....anket	_____ d....og
_____ r....ed	_____ w....iggle	_____ p....ickup
_____ z....ebra	_____ c....owboy	_____ p....aper
_____ dr....ess	_____ sw....im	_____ M....ommy
_____ m....otor	_____ l....ittle	_____ h.....amburger

Put a check mark by the words you tried. Try using words you think of, like colors, numbers, names of states, etc. If your child has difficulty, make the pause shorter between the parts of words.

Turn the video back on and watch. Listen to a puppet as it talks to Curtis and Cody.

Section B

Have your child get a puppet or a stuffed animal for you to use. Say, "Snowball (or use your animal's name) has trouble talking. She only says the first sound she hears. Watch. Snowball, say pumpkin." (Make Snowball say the first sound a few times.....p.....p.....p.....p. Be sure to say the sound, not the letter name.) Have your child listen as Snowball says one or two more words, and then have him/her join in and talk like Snowball. Use the following words:

_____ January (j....j....) _____ March (m....m....) _____ May (m....m....)
 _____ February (f....f....) _____ April (a....a....) _____ June (j....j....)

Check the words you used. Continue having Snowball say only the first sound of the words you say, using words you pick. You could use the names of people or names of cars. Be careful to say only the beginning sound, not the name of the beginning letter. When Snowball or your child tire of this activity, take a short break. The next video segment shows another puppet, only this time he repeats the word without the beginning sound.

Turn the video back on and watch. See if you can talk like the puppet.

Section C

This puppet wasn't able to say any of the first sounds in words. Try that with your child. Say, "Horsey (or your puppet's name) can't say the first sound words. Listen. Horsey, say hop." (Make Horsey say the word without the first sound.....op....op....op). Have the puppet try another word, and then have your child join the puppet trying to talk. Use the following words:

_____ cake (ake...ake...) _____ cookies (ookies....ookies....) _____ milk (ilk....ilk....)
 _____ cheese (eese....eese....) _____ soup (uop....oup....) _____ pizza (izza....izza....)
 _____ beans (eans....eans....) _____ meatloaf (eatloaf....eatloaf....) _____ juice (uice....uice....)

Put a check mark by the words you tried. How did your child do? This is more difficult than just saying the first sound. Practice the skills and watch the video again over the next few days until your child is comfortable with them.

Please have your child return the video and activity sheet to me on _____ . Thank you.

PHONOLOGICAL AWARENESS

PRE-TEST: ONSET-RIMES

Name _____

Date _____ Score _____

Rhyme

P 31

Show the student the pictures. Point to the first row and have the student name the pictures in that row. Say the name of the first picture in row one. Ask the student. "Which picture rhymes with the first one in the row? Point to that picture." Repeat with the remaining rows. Circle the student's response.

Note: Pictures used in assessments taken from Kang (1997)

Please note: Images on this page were redacted due to copyright concerns.

Rhyme (continued)

Tell the student. "Listen to the words I say. Fox, box. Fox and box both rhyme. Say them with me. Now tell me another word that rhymes with fox and box. _____. Good." Have the child supply a rhyming word for the word pairs below. Record the student's answer.

Student response

1. bat, cat, _____
2. dish, wish, _____
3. can, pan, _____
4. goat, coat, _____
5. blouse, mouse, _____

Rhyme Total correct _____

Onset-rime

Show the student the pictures. Point to the first row and have the student name the pictures in that row. Say, "I am going to try to trick you. I will say the name of one of the pictures in a funny way. You point to the picture that goes with the name." Say the following words, clearly separating the onset (first consonant/s) and the rime (the following vowel/s and consonant/s). Circle the student's response

1. b--ag
2. d--uck
3. g--oat
4. m--ouse
5. s--ix

Onset-rime (continued)

Tell the student. "I am going to try to trick you again. Listen to sounds I say. You say the word that the sounds make. H—elp. _____. Good." Have the student say the word after you say the onset and rime of the following words. Record the student's response.

	Student response
1. w—atermelon	_____
2. s—almon	_____
3. Chr—istmas	_____
4. t—unnel	_____
5. k—itten	_____

Onset-rime Total correct _____

_____ Rhyme

_____ Onset-rime

Total score _____

PHONOLOGICAL AWARENESS

POST-TEST: ONSET-RIMES

Name _____

Date _____ Score _____

Rhyme

P 36

Show the student the pictures. Point to the first row and have the student name the pictures in that row. Say the name of the first picture in row one. Ask the student, "**Which picture rhymes with the first one in the row? Point to that picture.**" Repeat with the remaining rows. Circle the student's response.

Rhyme (continued)

Tell the student. "Listen to the words I say. Fox, box. Fox and box both rhyme. Say them with me. Now tell me another word that rhymes with fox and box. _____. Good." Have the child supply a rhyming word for the word pairs below. Record the student's answer.

Student response

1. hug, tug, _____
2. pan, tan, _____
3. sight, tight, _____
4. sow, now, _____
5. wig, dig, _____

Rhyme Total correct _____

Onset-rime

P 38

Show the student the pictures. Point to the first row and have the student name the pictures in that row. Say, "I am going to try to trick you. I will say the name of one of the pictures in a funny way. You point to the picture that goes with the name." Say the following words, clearly separating the onset (first consonant/s) and the rime (the following vowel/s and consonant/s). Circle the student's response.

1. m—ou—se 2. f—i—ve 3. f—l—a—g 4. p—ie 5. c—oa—t

Onset-rime (continued)

Tell the student, "I am going to try to trick you again. Listen to sounds I say. You say the word that the sounds make. H—elp. _____. Good." Have the student say the word after you say the onset and rime of the following words. Record the student's response.

Student response

- | | |
|--------------|-------|
| 1. w—ave | _____ |
| 2. s—ausages | _____ |
| 3. pr—incess | _____ |
| 4. t—ower | _____ |
| 5. k—itchen | _____ |

Onset-rime Total correct _____

_____ Rhyme

_____ Onset-rime

Total score _____

Phoneme Level

The most difficult of metalinguistic skills, the ability to attend to one sound in the context of other sounds in a word, follows. Instruction on phonemes should be delayed until syllable segmentation has been mastered (Lieberman, Shankweiler, Fischer, & Carter, 1974). Edelen-Smith (1997) offers a scope and sequence of skills to use when planning phonemic awareness instructional activities: isolated sound recognition, phoneme counting, phoneme synthesis, sound-to-word matching, identification of sound positions, sound segmentation, letter-sound association, word-to-word matching and sound deletion. According to Lewkowicz (1980) and Adams (1990) phoneme manipulation is the most difficult of the phonemic awareness abilities.

The activity packets in this section include phonological tasks in which the children are asked to demonstrate:

- Video 1: isolated sound recognition (initial phoneme)
phoneme synthesis
- Video 2: isolated sound recognition (final phoneme)
phoneme counting
- Video 3: sound-to-word matching
identification of sound positions
- Video 4: sound segmentation
letter-sound association
- Video 5: word-to-word matching
sound deletion
- Video 6: manipulation

PHONEMES: VIDEO ONE ACTIVITY SHEET

Child _____

Parent/guardian _____ Date _____

Turn on the video and watch the first segment. When you are told to stop the video, do the following activity with your child.

Section A

Have your child listen to you while you say the following words. Ask what sound (not what letter name) the words start with.

_____ dog	_____ sunshine	_____ Oklahoma
_____ paper	_____ motor	_____ gold
_____ cup	_____ table	_____ fish
_____ red	_____ wiggle	_____ pickup
_____ cowboy	_____ zebra	_____ train
_____ dress	_____ nose	_____ Mommy
_____ alligator	_____ little	_____ hamburger

Put a check mark by the words you tried. How did your child do? If your child has trouble with a particular beginning sound, have him/her say as many words that start with that letter as possible (mother, man, music, mountain, me, money, etc.). You can do the above activity anywhere you are (in the car, in the grocery store, etc.).

Turn the video back on and watch. Listen as Rygh, Clive, Callie, and their Mom play an "I Spy" game.

Section B

It's your turn to play. Look around the room until you "spy" an object. Without telling what the object is, say, "I spy something that begins with the soundp...." Let your child guess what it is. If they guess the wrong object, but it starts with the correct letter (for example, you were thinking of pillow but they said picture), tell them, "That's a good guess. It does start with the soundp...., but I'm thinking of something else." Take turns spying and guessing.

Turn the video back on and watch. Jessica and her Mom are going to "visit the farm".

Section C

You and your child "visit the farm". Say, "We are going to the farm and we are going to see a m--ou--se." Have your child guess what animal you are talking about. Say the same thing again, only this time use different animal names. You can use your own or pick from the list below.

_____ sh--ee--p	_____ p--i--g	_____ s--n--a--ke
_____ h--or--se	_____ d--u--ck	_____ c--a--t
_____ c--ow	_____ h--e--n	_____ g--oa--t
_____ t--ur--t--le	_____ d--o--g	_____ g--oo--se

Please put a check mark by the words you used. You can play this game by pretending to go to places like the zoo, the mountains, the ocean, or even into space. Try a different imaginary trip every day.

Please have your child return the video and activity sheet to me on _____ . Thank you.

PHONOLOGICAL AWARENESS

PRE-TEST: PHONEMES

Name _____

Date _____ Score _____

Initial phoneme

Matching

P 44

Show the student the pictures in the first row and have the student name them. Point to the first picture and say its name. Ask the student "What sound does cake start with? That's right, cake starts with /k/. There is one other picture in the row that starts with a /k/. Point to that picture." Repeat with the remaining rows. Circle the student's response.

Show the student the pictures in the first row and have the student name them. Say, "Tell me which one does not have the same beginning sound as the others." Circle the student's response.

Initial phoneme (continued)**Matching (continued)**

Tell the student, "Listen while I say two words. Music, many. Say them with me. What sound do they both start with? Yes. They start with an /m/ sound." Repeat using the following words. Record the student's response.

Student response

6. bus, baby, _____
7. table, teeth, _____
8. put, pail, _____
9. fork, fish, _____
10. coat, come, _____

Oddity tasks (continued)

Tell the student, "Listen while I say some words. Duck, door, key, down. Say them with me and listen to the first sounds. Which word doesn't belong? That's right. Key." Repeat using the following words. Circle the student's response.

6. ham, cat, hat, house
7. pen, pencil, eraser, put
8. house, money, men, more
9. sled, ball, seven, six
10. over, lip, let, ladder

Initial phoneme Total correct _____

Blending

P 47

Tell the student, "I am going to say some sounds that will make a word when you put them together. Listen to this /p/ /i/ /n/. " (Pronounce each sound separately.) "What word does that make? Yes, it makes pin." Say the following segmented words and have the student point to the picture in the row that he/she feels is correct. Circle the student's response.

1. ea—r

2. f—l—y

3. f—i—sh

4. t—i—re

5. s—n—ai—l

Blending (continued)

Tell the student, "I am going to say some more sounds that will make a word when you put them together. Listen carefully and tell me the word I am saying." Say the following segmented words, separating the phonemes. Record the student's response.

- | | Student response |
|------------|------------------|
| 6. i—t | _____ |
| 7. s—t—o—p | _____ |
| 8. m—e—l—t | _____ |
| 9. l—a—m—p | _____ |
| 10. b—u—g | _____ |

Blending Total correct _____

Counting

Have the student watch and listen while you say the following words. Repeat the words, clapping once as you say each phoneme. Pronounce each sound separately.

i—n.....i—n (clap twice, once for each phoneme)

ch—ai—r.....ch—ai—r (clap three times, once for each phoneme)

b—r—ow—n.....b—r—ow—n (clap four times, once for each phoneme)

Say the above again. Have the student repeat the phonemes and clap with you as you say them the second time.

Ask the student to repeat the following phonemes after you while clapping once with each.

Record the number of claps.

	Number of claps	Number possible
1. i—t	_____	(2)
2. l—e—g	_____	(3)
3. s—o—cks	_____	(3)
4. p—l—a—te	_____	(4)
5. b—e—d	_____	(3)
6. f—r—o—g	_____	(4)
7. h—e	_____	(2)
8. w—i—n—t—er	_____	(5)
9. m—u—d	_____	(3)
10. h—u—n—t	_____	(4)

Counting correct _____

_____ Blending

_____ Initial phoneme _____ Counting

Total score _____

PHONOLOGICAL AWARENESS

POST-TEST: PHONEMES

Name _____

Date _____ Score _____

Show the student the pictures in the first row and have the student name them. Point to the first picture and say its name. Ask the student "What sound does wagon start with? That's right, wagon starts with /w/. There is one other picture in the row that starts with a /w/. Point to that picture." Repeat with the remaining rows. Circle the student's response.

Initial phoneme (continued)

Oddity tasks

Show the student the pictures in the first row and have the student name them. Say, "Tell me which one does not have the same beginning sound as the others." Circle the student's response.

Initial phoneme (continued)**Matching (continued)**

Tell the student, "Listen while I say two words. Music, many. Say them with me. What sound do they both start with? Yes. They start with an /m/ sound." Repeat using the following words. Record the student's response.

	Student response
6. lamb, lettuce	_____
7. rake, run	_____
8. sun, snake	_____
9. apple, ambulance,	_____
10. love, liver,	_____

Oddity tasks (continued)

Tell the student, "Listen while I say some words. Duck, door, key, down. Say them with me and listen to the first sounds. Which word doesn't belong? That's right. Key." Repeat using the following words. Circle the student's response.

6. jump, top, jar, jelly
7. house, number, now, nine
8. race, red, yes, raindrop
9. sled, seven, six, ball
10. water, well, some, watch

Initial phoneme Total correct _____

Blending

Tell the student, "I am going to say some sounds that will make a word when you put them together. Listen to this /p/ /i/ n/." (Pronounce each sound separately.) "What word does that make? Yes, it makes pin." Say the following segmented words and have the student point to the picture in the row that he/she feels is correct. Circle the student's response.

1. f—i—sh

2. s—n—ai—l

3. f—l—y

4. t—i—re

5. b—a—g

Blending (continued)

Tell the student. "I am going to say some more sounds that will make a word when you put them together. Listen carefully and tell me the word I am saying." Say the following segmented words, separating the phonemes. Record the student's response.

- | | Student response |
|------------|------------------|
| 6. a—t | _____ |
| 7. s—u—n | _____ |
| 8. sh—ar—k | _____ |
| 9. h—e | _____ |
| 10. m—o—p | _____ |

Blending Total correct _____

Counting

Have the student watch and listen while you say the following words. Repeat the words, clapping once as you say each phoneme. Pronounce each sound separately.

i—n.....i—n (clap twice, once with each phoneme)

d—o—g.....d—o—g (clap three times, once with each phoneme)

s—n—a—ke.....s—n—a—ke (clap four times)

Say the above again. Have the student repeat the phonemes and clap with you as you say them the second time.

Ask the student to repeat the following phonemes after you while clapping once with each.

Record the number of claps.

- | | Number of claps | Number possible |
|--------------|-----------------|-----------------|
| 1. h—i | _____ | (2) |
| 2. l—oa—d | _____ | (3) |
| 3. m—e—n | _____ | (3) |
| 4. g—r—ee—n | _____ | (4) |
| 5. sh—ou—t | _____ | (3) |
| 6. f—l—i—p | _____ | (4) |
| 7. o—n | _____ | (2) |
| 8. S—a—n—t—a | _____ | (5) |
| 9. b—a—t | _____ | (3) |
| 10. h—u—n—t | _____ | (4) |

Counting correct _____

_____ Initial phoneme

_____ Blending

_____ Counting

Total score _____

APPENDIX

Screening Assessment

**PHONOLOGICAL AWARENESS
SCREENING ASSESSMENT**

Name _____

Date _____ Score _____

PHONOLOGICAL AWARENESS SCREENING ASSESSMENT

Words

Clapping

Have the student watch and listen while you say the following sentences. Repeat the sentences, clapping once as you say each word:

I clap.....I clap (clap twice, once with each word)

I clap real loud.....I clap real loud (clap four times, once with each word)

We go to the store.....We go to the store (clap five times)

Say the above again. Have the student repeat the sentences and clap with you as you say them the second time.

Ask the student to repeat the following sentences after you while clapping once with each word. Record the number of claps for each sentence.

	Number of claps	Number possible
1. I clap.	_____	(2)
2. I have fun.	_____	(3)
3. I like to play.	_____	(4)
4. I like to play ball.	_____	(5)
5. Can you play with me?	_____	(5)

Counting

Put six markers on a flat surface in a row in front of you and six in front of the student. Have the student watch and listen while you say the following sentences. Repeat the sentences, moving one marker away from you as you say each word:

I clap.....I clap (move two markers, one for each word)

I clap real loud.....I clap real loud (move four markers, one for each word)

We go to the store.....We go to the store (move five markers)

Say the above again. Have the student repeat the sentences and move their own markers as you repeat the activity.

Ask the student to repeat the following sentences after you while moving one marker for each word. Record the number of markers moved for each sentence.

	Number of markers moved	Number possible
6. I clap	_____	(2)
7. She ran fast.	_____	(3)
8. He ran fast, too.	_____	(4)
9. I like cats.	_____	(3)
10. I like to play with cats.	_____	(6)

Words Total correct _____

Syllables

Clapping

Have the student watch and listen while you say the following words. Repeat the words, clapping once as you say each syllable:

bat.....**bat** (clap once, once with each syllable)

tiptoe.....**tiptoe** (clap twice, once with each syllable)

basketball.....**basketball** (clap three times)

Say the above again. Have the student repeat the words and clap with you as you say them the second time.

Ask the student to repeat the following words after you while clapping once with each syllable. Record the number of claps for each word.

	Number of claps	Number possible
1. bat	_____	(1)
2. racehorse	_____	(2)
3. kitten	_____	(2)
4. elephant	_____	(3)
5. rhinoceros	_____	(4)

Counting

Put one marker on the Hearing Sounds and Words Activity Sheet front of you and one on the Activity Sheet in front of the student. Have the student watch and listen while you say the following words. Repeat the words, moving the marker one space away from you as you say each syllable:

bat.....**bat** (move the marker one space, once for each syllable)

tiptoe.....**tiptoe** (move the marker two spaces, once for each syllable)

basketball.....**basketball** (move the marker three spaces)

Say the above again. Have the student repeat the words and move their own marker as you repeat the activity.

Ask the student to repeat the following words after you while moving a marker on the Hearing Sounds and Words Activity Sheet, once for each syllable. Record the number of moves for each word.

	Number of moves	Number possible
6. bat	_____	(1)
7. haircut	_____	(2)
8. hamburger	_____	(3)
9. open	_____	(2)
10. motorcycle	_____	(4)

Syllables Total correct _____

Show the student the pictures. Point to the first row and have the student name the pictures in that row. Say the name of the first picture in row one. Ask the student, "**Which picture rhymes with the first one in the row? Point to that picture.**" Repeat with the remaining rows. Circle the student's response.

Show the student the pictures. Point to the first row and have the student name the pictures in that row. Say, "I am going to try to trick you. I will say the name of one of the pictures in a funny way. You point to the picture that goes with the name." Say the following words, clearly separating the onset (first consonant/s) and the rime (the following vowel/s and consonant/s). Circle the student's response.

1. t--ent

2. m--op

3. l--ock

4. h--ot

5. b--oat

Show the student the pictures in the first row and have the student name them. Point to the first picture and say its name. Ask the student "What sound does pear start with? That's right, pear starts with /p/. There is one other picture in the row that starts with a /p/. Point to that picture." Repeat with the remaining rows. Circle the student's response.

Show the student the pictures in the first row and have the student name them. Say, "Tell me which one does not have the same beginning sound as the others." Repeat with the remaining rows. Circle the student's response.

Phonemes (continued)

Oral blending

Tell the student, "I am going to say some sounds that will make a word when you put them together. Listen to this. /p/ /i/ /n/. " (Pronounce each sound separately.) "What word does that make? Yes, it makes pin. Now listen carefully and tell me what words these sounds make." Repeat using the following words. Record the student's response.

	Student response
1. u—p	_____
2. h—ou—se	_____
3. s—a—n—d	_____
4. c—a—t	_____
5. b—r—oo—m	_____

Phonemes, blending Total correct _____

Counting

Have the student watch and listen while you say the following words. Repeat the words, clapping once as you say each phoneme. Pronounce each sound separately.

l—amb.....l—amb (clap twice, once with each phoneme)

r—a—ke.....r—a—ke (clap three times, once with each phoneme)

u—p.....u—p (clap twice)

Say the above again. Have the student repeat the phonemes and clap with you as you say them the second time.

Ask the student to repeat the following phonemes after you while clapping once with each. Record the number of claps.

	Number of claps	Number possible
1. u—p	_____	(2)
2. s—ou—p	_____	(3)
3. f—a—s—t	_____	(4)
4. a—s—l—ee—p	_____	(5)
5. d—i—sh	_____	(3)

Phonemes, counting Total correct _____

_____ Words	_____ Phonemes, initial	
_____ Syllables	_____ Phonemes, blending	
_____ Onset-rime	_____ Phonemes, counting	Total score _____

Suggested Reading

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CHAPTER 5

Summary, Conclusions, and Recommendations

Summary

Research shows that phonological awareness is a strong indicator of reading success (Adams, 1990; Smith, Simmons, & Kameenui, 1995). It predicts reading acquisition, it is intricately involved in reading (proficiency in the different phonological skills causes one to become a good reader, and conversely, reading ability causes acquisition of some of the higher levels of phonological awareness), it is teachable, and those who come to school with deficits in phonological awareness are at risk of being poor readers who may never catch up with their more phonologically astute peers. With the backing of such robust research, it is imperative that teachers thoroughly examine how they address the phonological needs of their students in the classroom. Students must be assessed at an early age (pre-school, kindergarten, and early first grade). Curriculum needs to be shifted to meet the phonological needs of all students. Reading programs should include games and activities which stress the use of oral language and interaction among children. Children who are low in phonological skills should be given additional support (e.g., added activities, explicit instruction and modeling, and small group tutoring).

One way to provide extra assistance to children is to enlist the help of their parents. When parents are provided a curriculum which includes modeling and clear, understandable instruction and activities they will be able to purposefully aid their children

to become better readers. The product from this project will supply the some of the guidance that the parents need. The parents may find that they are not only helping their children, but they may feel closer as a family because of the time spent in fun activities together, and they may feel a sense of accomplishment and pride in being able to help their child learn to read. Parents, teachers, and children all benefit.

Conclusions

Based on research, guidelines for an effective phonological awareness program can be developed.

1. The objective of any phonological awareness activity is to facilitate children's ability to perceive that speech is made up of a series of sounds.
2. Teachers need to be familiar with research on phonological awareness.
3. All young children should be engaged regularly in activities which promote phonological awareness.
4. The phonological tasks in which the children have difficulties need to be identified.
5. Students identified to be at risk because of phonological awareness deficits must receive early and explicit instruction.
6. Developmentally appropriate means for engaging children in the tasks should be considered. Activities should:
 - A. Develop children's positive experiences toward learning

- B. Encourage interaction among children
 - C. Encourage children's curiosity about language
 - D. Take into account individual differences
 - E. Be fun and informal, and should not be used solely as diagnostic tools
6. Regular evaluation and modification of phonological awareness activities is required as children's phonological understandings change.
 7. Parents should be encouraged to engage their children in oral communication and literacy activities at home. Teachers need to provide guidance and modeling to the parents.

Recommendations

In reviewing the research I learned many things about phonological awareness: its components, the developmental sequence involved, its importance in the acquisition of reading. As a reading teacher, I plan to redouble my emphasis of phonological awareness in the classroom, becoming more deliberate in phonological assessment and instruction.

I learned several things in the development of the project itself. I found that as I video taped the parents and children, the product was more useable, and more closely aligned to what I needed, if I "directed" the segment. Just as children need explicit modeling and scaffolding, so the parents needed explicit directions from me. The parents were all very willing and eager to learn skills that would help their children become better readers. They were a pleasure to work with.

At the outset of developing the project, I had no experience with video equipment. I was able to learn how to operate a video camera with little problem, but still had no expertise in video editing. I was at a loss. However, as I brainstormed with any number of friends, a workable plan developed. My solution: enlist experienced help. I located someone who had video editing training and who also had access to a local high school's video editing equipment. With her willingness, the editing was accomplished.

I recommend to teachers of young children that early in the school year assessments be administered to determine what the phonological needs are. Instruction in phonological awareness should begin immediately, in the classroom and at home with the video series or other similar methods. Teachers can develop and video their own activities to supplement and expand upon the product. A reading curriculum that emphasizes phonological awareness, such as Open Court's Collections for Young Scholars (Adams et al., 1995), should be considered and implemented in the classroom. Oral language skills should be addressed by using such programs as the Peabody Language Development Kit (Dunn, L. M., Smith, J. O., & Dunn, L. M., 1981). Supplemental computer programs can be purchased for extra classroom assistance. For example, Great Wave Software has produced two software programs designed to develop phonological awareness in children: DaisyQuest (1997) and Daisy's Castle (1997). Another of their programs, Undersea Challenge (1997), assesses the skills presented in DaisyQuest and Daisy's Castle.

The curriculum developed in this project will help the teacher in meeting the needs of children with low phonological abilities. It will help encourage parent/teacher interaction as well as parent participation in their child's reading acquisition. This is not a

complete phonological awareness curriculum in and of itself: the teacher must continually monitor and assess the students and arrange his/ her classroom curriculum to meet the needs of children. However, with parents and teachers as partners, more children than ever should be able to realize reading success.

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