Combining Phonological Awareness and Word Recognition Instruction

by Benita A. Blachman, Darlene M. Tangel, Eileen Wynne Ball, and Rochella Black

Many recent studies have shown that instruction in phoneme awareness helps children acquire early reading and spelling skills. Phonological awareness instruction, combined with instruction that connects the phonological segments to letters, enables more children to master early decoding than programs that lack these components. Practice with phoneme segmentation, blending, and manipulation also enhances early spelling and accelerates the rate at which children learn to read new words in text. Children who learn how print maps to speech and who can apply that knowledge in kindergarten or first grade are more likely to become good readers than children who remain dependent on contextual guessing strategies. This article describes the specific techniques we have used to obtain significant improvements in reading with low-income, inner-city children (Blachman, Ball, Black, & Tangel, 1994; Blachman, Tangel, Ball, Black, & McGraw, 1999).

The first phase of our project involved an 11-week intervention carried out by kindergarten teachers; the second phase examined the effects of a follow-up first grade reading program that emphasized explicit, systematic instruction in the alphabetic code. At the end of both first and second grades, treatment children outperformed control children in phonological awareness, letter-sound knowledge and word recognition. Control children were taught with the Scott Foresman basal reading program, with workbooks and trade books as supplements. The instructional procedures described below were associated with superior outcomes for children in the treatment group.

Kindergarten Intervention Program

The 11-week kindergarten phoneme awareness training program conducted by the teachers and their assistants was adapted and expanded from an earlier 7-week version of this program (Ball & Blachman, 1988). Each 15- to 20-minute lesson consisted of three parts: a) say-it-and-move-it phoneme segmentation activities; b) segmentation- related activities; and, c) letter name and letter sound training. The segmentation activities incorporated suggestions found in the phoneme awareness literature (e.g., Bradley & Bryant, 1983; Elkonin, 1973; Liberman & Shankweiler, 1979). The *say-it-and-move-it* activities were designed to teach children to segment words into phonemes. Children were taught to move disks from the top half of an 8 1/2 by 11 inch card to the bottom half to represent the phonemes in one-, two- and three-phoneme items. First, children learned to say and represent single sounds (e.g., /i/), then repeated sounds (e.g., /i/ /i/), then two phoneme items (e.g., *it*) and finally three phoneme items (e.g., *lip, sun*).

Initially, continuous sounds were used in the initial position to reduce the distortion of the sounds in the segmentation activity. During the fourth week of instruction, one or two letters (beginning with the letter a) were put on the tiles of only those children who had mastered both the name and sound of the letter. The letters were selected from among the eight letters introduced during the intervention (*a, m, t, i, s, r, f, b*). The children who were ready for the letter tiles could use a combination of letter tiles and blank tiles, or they could continue to use all blank tiles to segment a word. During the eighth week of instruction, children who had mastered several letter names and sounds were given enough letter tiles to produce a consonant-vowel-consonant real word (e.g., *bit*) during the segmentation activities. Thus, during the final three weeks of instruction (during the last twelve, 20-minute lessons), selected children were exposed to a small pool of real words. The children in each group who had not mastered letter names and sounds continued to use blank tiles throughout the intervention.

Children learned to say the word slowly and simultaneously move a disk to the appropriate box to represent each phoneme in the word.

The *segmentation-related activities* included activities involving various degrees of segmentation. For example, a sound categorization task that was similar to the task used by Bradley & Bryant (1983) was included in this part of the lesson. In this task, children were asked to group words on the basis of rhyme or alliteration. In another segmentation-related activity, modeled after Elkonin (1973), children were given booklets containing pictures of objects representing simple consonant-vowel-consonant words (e.g., *fan, sit, lip*). Underneath each picture was a series of boxes representing the number of phonemes in the word. Children learned to say the word slowly and simultaneously move a disk to the appropriate box to represent each phoneme in the word.

A third part of each lesson involved direct instruction in *letter names and letter sounds*. The results of previous phoneme awareness training studies suggest that phoneme awareness instruction may have a greater influence on early reading and spelling when connections are made between the sound segments of the word and letters representing those segments (Blachman, 1989; Bradley & Bryant, 1983). Eight letters were included in our intervention, *a, m, t, i, s, r, f, b*. These letters were selected because combinations of these letters generate a significant number of real words, using the consonant-vowel-consonant pattern. Illustrated alphabet cards were used to reinforce initial sounds. For example, the *r* card had a picture of a *r*ed *r*ooster in *r*ed *r*unning shoes and the *t* card showed *t*wo *t*eenagers *t*alking on *t*elephones. Children also played a variety of games (e.g., Bingo) to reinforce sound-symbol associations.

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First Grade Reading Program

The first grade reading program for the treatment children (described below) was provided *in place of and not in addition to* the basal reading program used with other children in this district. The length of each lesson (30 minutes) was consistent with the length of time both treatment and control classroom teachers reported spending with each of their reading groups. Children receiving the treatment approach, when compared to the control group, did not receive any extra time devoted to reading instruction in first grade.

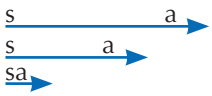
Treatment children began the first grade year with a review of the phoneme awareness and letter sound activities presented in kindergarten. To help teachers accommodate individual differences, guidelines for the first grade reading program were prepared at three different levels. One level was for groups needing minimal review of the kindergarten activities (one to two weeks at the beginning of the school year). One level was for groups needing a longer review period (four to six weeks), and another level was for children needing an extensive review and gradual transition to the first grade reading program (about 12 weeks). In addition to phoneme segmentation activities and games used during kindergarten, the first grade review and transition phase included introducing all letter sounds (not just the eight sounds introduced during the kindergarten program), using selected workbook pages for the first time for additional practice connecting letters to sounds, and learning some high frequency words that would appear in the early readers (e.g., *I, to, said*). Following the review and transition phase, the first grade reading program for the treatment children consisted of a daily, 30-minute, five-step reading program (adapted from Blachman, 1987) that continued to reinforce phoneme awareness skills and emphasize the alphabetic code.

A second phoneme analysis and blending technique was used throughout the first grade year to help children learn to synthesize sounds without resorting to letter-by-letter blending.

Although groups began the first grade five-step reading program at different times in first grade (depending on the number of weeks spent in phonological awareness and sound-symbol review activities), once the five-step program began, the group followed the steps described below:

1) Each lesson began with a brief and quick-paced (one to two minutes) review of sound-symbol associations learned in previous lessons and the introduction of new sound-symbol correspondences. For this part of the lesson, teachers utilized a sound pack (set of cards) containing each of the graphemes (letters and letter clusters) being reviewed. To highlight the vowels, vowel letters were printed in red.

2) The second step in the program was instruction in phoneme analysis and blending skills. To avoid the pitfalls of the letter-by-letter blending strategy that teachers often use, a blending technique adapted from Engelmann (1969) was utilized. In the typical approach used to teach blending, children are taught to attack an unknown word by sounding it out letter-by-letter (e.g., /b/ /a/ /t/) and then blending it to produce the word. However, it is impossible with this approach to recover the original word, bat, regardless of how quickly the child tries to blend the sounds together (Liberman & Shankweiler, 1979). The Engelmann procedure avoids much of the distortion that comes with trying to produce sounds in isolation. Children were taught to pronounce as a single unit a consonant (continuant) followed by a vowel. To begin, the teacher represented this strategy on the board as follows:



The teacher pointed to the first letter, and the child was taught to produce that letter's sound and hold the sound until the teacher's finger reached the second letter. When her finger touched the second letter, the second sound was produced and held. With each successive practice opportunity, the length of time between sounds was decreased until the two sounds were pronounced as a single unit. By adding final consonants (initially, stop consonants) and pronouncing the whole word, a set of real words was built (e.g., *sat, sam*). Words containing new short vowels also were introduced in this manner. Depending on the needs of the group, this activity was used for a few days or a few weeks and then eliminated from the lessons.

A second phoneme analysis and blending technique was used throughout the first grade year to help children learn to synthesize sounds without resorting to letter-by-letter blending. Adapted from a technique suggested by Slingerland (1971), each child used a small pocket-chart, which we called a "sound board," to manipulate letters and form words. Consonants and vowels previously mastered by the children were written on individual letter cards and placed in the top pocket. First, the teacher pronounced a word, such as *fat*, emphasizing the medial vowel sound. Then children repeated the word, listened for the vowel sound and selected the appropriate vowel grapheme card (vowels were color coded) from the top pocket and placed it in the lower pocket. The teacher then repeated the word and asked the child to select the letter that represented the first sound in the word and place it in the appropriate position (in front of the vowel) in the bottom pocket. The teacher pronounced part of the word saying, "Now we have *fa*. Our word is *fat*. What is the last sound we hear in *fat*?" The child then selected the *t* and placed it at the end of the word. The whole word was then read either by an individual child or by the group.

Once the child was successful representing words in this fashion, phoneme manipulation was introduced. For this task,

the child might be asked to change *fat* to *fan* and, when new vowels were mastered, change *fan* to *fin*. A later lesson might require changing *fin* to *shin* and, eventually, as new syllable types were introduced on the sound board, changing *shin* to *shine*.

3) The third activity in this five-step plan gave children the opportunity to develop more automatic recognition of words that they had practiced previously on the sound board. Once they could construct and accurately read on the sound board a pool of phonetically regular words, these words were put on flash cards and the children practiced reading them quickly. High frequency words that have to be memorized, such as *said*, were selected from stories the children would be reading and were also introduced at this time. These words were written in a different color. For approximately two to three minutes daily, children practiced reading both phonetically regular words and irregular, high frequency words. The goal of this quick-paced activity was to build automaticity.

Although the focus of many of the early activities was on developing accurate and automatic word recognition skills, vocabulary development and comprehension were not neglected.

4) Next, children engaged in 10 to 15 minutes of reading connected text. Children read phonetically controlled readers from the *Primary Phonics* series published by Educators Publishing Service, and selected stories from the Scott Foresman basal reading series used throughout the school district. (None of the other materials, such as workbooks, from the Scott Foresman series were used.) Each classroom also had trade books for independent reading at other times during the day, and children went to the school library for additional reading materials. Although the materials used during the 30-minute reading lesson were consistent across treatment groups, treatment teachers were free to use whatever books they thought appropriate for the rest of the day. There was considerable variation across classrooms.

5) The last step of each lesson included a short writing to dictation activity. Generally, four to six words and a sentence were dictated. Teachers dictated words drawn from word lists that were practiced on the sound boards or words encountered in the phonetically controlled readers. Children were directed to print vowel headings at the top of each dictation page (e.g., *a* and *i*, or later, *ai*, *oa*, *ea*). These headings represented the particular vowel sounds that were the target sounds for that day's lesson. The dictation activity gave teachers an opportunity to evaluate student progress on the target sounds for the day. The dictation notebooks became a record of student growth over the first grade year, as both students and their teachers could review the progress that was made as students progressed from writing and reading simple closed syllable words (e.g., *ham*) to more complex patterns (e.g., *hike, rain*).

By the time children completed the program, they had been introduced to words representing all six syllable types, including closed (*fat, flat*), final e (*cake, shine*), open (*me, cry*), vowel team (*pain, teach, crawl*), vowel + r (*burn, start*), and consonant *le* (bot*tle* and ta*ble*). Although the focus of many of the early activities was on developing accurate and automatic word recognition skills, vocabulary development and comprehension were not neglected. Teachers were encouraged to make sure that children knew the meaning of all words they were asked to read or spell and comprehension of stories was developed using a variety of strategies (e.g., retellings, making predictions). As the children progressed through the program and were able to recognize more words, more time in each lesson was devoted to reading new stories and rereading old ones. To continue to stay within the time allocated for reading groups, it was suggested to teachers that they begin to alternate the use of the sound board and dictation, using the sound board two days per week and dictation three days per week. This allowed more time for reading connected text.

We found that children who participated in our phonological awareness program in kindergarten, followed by a first grade reading program (extended to grade 2 for some children) that built on this awareness and emphasized explicit instruction in the alphabetic code, demonstrated a significant advantage in reading at the end of grades 1 and 2. Our findings reinforce the conclusions of many researchers that during the early stages of reading acquisition "instruction that facilitates both phoneme awareness and alphabetic coding is vitally important to success" (Vellutino, 1991, p. 442).

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