

In 2000, the [National Reading Panel](#) <sup>1</sup> (NRP) published its comprehensive report on teaching reading. It endorsed instruction in five essential areas. The first is instruction in phonemic awareness, i.e., growth in the ability to hear and pronounce phonemes composed of spoken words. The report stated that the phonemic component was the most critical because of its causal effect on learning phonetic skills necessary for decoding, which is the second essential area. The report documented this causal relationship. From their search of nearly 2000 published articles, **the Panel identified 52 well-conducted studies of phonemic awareness that demonstrated this causation.** In the process of demonstrating this relationship, various ways of teaching phonemic awareness were also demonstrated. This becomes a sub-topic of this paper.

**Thus, the following premise/promise has been established: if a child gains knowledge of and skills with phonemes in words, learning to decode words should be easier.**

Discovering this dynamic was a major breakthrough. It is considered one of the most important findings in our time <sup>2</sup>. ([Rayner, et al. 2001 p.20-21](#)). It promises to make teaching phonics more feasible, and more importantly, resulting in an increased number of children learning to read.

As cited in the Rayner monograph, this premise has proven out. According to Marilyn Adams, a prolific writer on the subject, without improvements in phonemic awareness, “the basic phonic curriculum is inherently intractable, slow, inefficient, and worse: likely to be ineffective.” <sup>3</sup>. (Adams, 1990, Chapter 12.)

Difficulties can show up early in attempts to teach reading, even with phonics, without first acquiring some initial knowledge of phonemes. Researchers have reported this observation with children learning letter/sound identity but still having hard times recognizing the word after sounding out the letters. <sup>4</sup>. (Lieberman, 1973 & 1974) They still are unable to form or “induce the words from the code”, as Engelmann and Adams report (Engelmann, p. 3. 2004 <sup>5</sup>, Adams, 1998 <sup>6</sup>). These difficulties tend to discourage the teaching of phonics altogether, especially at the start. Learning the first steps of reading words is not easy.

#### **FIRST STEPS** (without prior phonemic awareness)

1. Pronounce the sound for a select number of letters.
2. In a given printed word, spelled with these letters, pronounce the sound that letters represent.
3. Sound out the letter/sounds in the word, in the order spelled.
4. Pronounce and recognize the word. (“Induce the word from the code”)

5. (Step 4 is the hardest. It is dependent on a coordinated strategy between phonemic awareness and a decoding. )

This is “one of the hardest parts of learning to read.”<sup>7</sup> (Ehri, 1998) Combined, they translate print to spoken language at the very inception of learning to read. This is where “bottlenecks” can occur that obstruct learning.<sup>8</sup> (Perfetti, 1985) They are a natural “impasse” that can create confusion, misunderstanding, frustration and resistance. So, the question here is, not the validity of the premise, but how it can assist and keep the **promise** of avoiding dire possibilities?

### **What creates this difficult impasse in steps 3 and 4 and how does phonemic awareness help?**

Learning to read is fraught with natural hazards at its inception. They are due to the nature of speech and the invention of alphabetic writing systems, English in particular.

The **first hazard** is found on the speech side. It concerns the nature of speech and its phonemes. For a child, many of the sounds in speech are “elusive,” and unnoticed.<sup>9</sup> Some phonemes are hidden.<sup>10</sup> (Liberman, 1977) They are not neatly laid out in speech like letters. They are rapidly spoken and tend to be bunched up into bundles of sounds that sound like a single pulse. **This makes it difficult to distinguish phonemes from one another so that their attachment to letters in words can be learned.**

The **second hazard** is found in the print. Letters in words have their own issues with their unique shapes. Their purpose is to represent the phonemes, but given the nature of phonemes, letters cannot exactly match phonemes as they exist in nature. Letters are neat creations. Phonemes have evolved in nature. Print can only approximate speech in nature. For print to precisely represent the phonemic structure of words, some letters would need to be piled on top of each other. Therefore, what the child sees with his/her eyes in neatly arranged print does not always match what they hear.

Some complications also come from language. For example, in English, there are 43 phonemes with only 26 letters to do their representing. The match in other languages may be better. Some letters in English must do multiple duty. And phonemes can be spelled differently. This may mean using more than one letter. Together, both sources, speech and print, contribute to the difficult impasse in learning those first steps.<sup>11</sup> (Rayner, 2001)

**So how does phonemic awareness fulfill its promise** of making step 4 easier and thus overcoming this difficult impasse? Simply put: increased awareness makes the phonemes more distinct to the ear, out from hiding. Here they can be more easily learned, pronounced, and related to letters.

In speech, a need for more distinction is not a problem. The brain automatically identifies all phonemes for translation into spoken words.

For reading, training in oral exercises is necessary, prior to and along side of formal instruction. It exposes the sounds for awareness, beyond what is not obvious in speech. This makes it easier to learn the appropriate match of letters and sounds within words, in preparation for learning particular

decoding strategies. i.e. step 4. The training strengthens skills through pronunciation of phonemes, in various ways, to prepare for a decoding strategy.

Ironically, once some words are acquired, their letters and phonemes tend to interact and reinforce each other through a reciprocal relationship. This relationship continuously adds strength and clarity to phonemic awareness for more advanced learning. Research indicates that it *“leads to further refinement of children’s phonological representations”*. Thus, phonemic awareness is both a cause and an effect of learning to read. It becomes *“ubiquitous”* throughout reading.

A Rayner et. al. quote:

*“At the start of reading instruction, children’s knowledge of phonological structure is partial. .... The alphabetic writing system **both builds upon and facilitates** the development of phonemic representations... [awareness] These refinements in turn facilitate further development of reading skill.”*

*“The implication is that experience with an alphabetic orthography may be necessary for an individual to develop full phonological representations.”* <sup>12</sup>.

Exposing the child to the hazards of learning to read, without increased phonemic awareness, is risky. Successful ways of teaching and training are needed. Understanding their cause and effect relationship is not enough. Researcher Mark Seidenberg stresses the need for practitioners to translate cognitive science into effective practice. **Uncertainty about finding the best way to implement the phonological premise becomes critical in keeping its promise of making learning to read more accessible.**

Evidence of lack of clarity on this point in the literature is evident in the **NRP report**. In identifying the best way to teach phonemic awareness, the distinguish **Panel** naturally referred to the 52 studies. **It found that some combination of six tasks were used in these studies for training.** These six tasks have become widely adopted in the effort to find the best application of the premise.

The **Panel’s** report indicated that the effect of a particular combination of these six tasks depended on the length of time required and the combination of tasks used. The **Panel’s** recommendation restricted the use to only three of the six tasks. They preferred the two tasks of blending and segmentation because of their close relation to reading. In spite of this caution, all six tasks are often combined in current practice, in spite of the time they require. <sup>13</sup>. (Adams, 1998 p.16) No other task for teaching phonemic awareness was identified by the Panel, other than these six.

Perfetti stresses that *“all levels of phonemic awareness”* do not need to *“come first”*, as a prerequisite to initiating formal instruction. This leads to the question: **What kind and amount of training is most effective in facilitating formal instruction?**

Much to the dismay of the **Panel**, exactly how the tasks were applied and connected to formal instruction was unclear in the 52 studies. The connection of the blending task to a decoding strategy takes the lead from the phonemic awareness training. For blending, the phonemes are dictated in disconnect segments with spaces for letters. The child is then to combined, or *“blend”*, the segments

into a word, in one step. The blending action is not explicit. This kind of blending, from dictated segments of phonemes into words in one step is a difficult application to learn for kindergarten children.

The chief problem with all six tasks is with the segmentation of phonemes. Research literature often refers to phonemes as “abstract hypothetical entities,” or segments, rather than how they naturally exist in speech. (Gough, 1984<sup>14</sup>. Isabell Liberman, et al 1974.<sup>15</sup>. ) This translates into the blending practice of forming and recognizing a word from its dictated sounds, in one step.

Of course, as seen above, phonemes don’t exist in speech as broken segments. Segments are an abstraction from speech. Learning this kind of blending action, from separated segments, is a cognitive challenge. Because phonemes do not exist in their speech as broken segments, learning how to analyze words into segmented phonemes or synthesize dictated separated segments into words, are difficult and time consuming to teach. Thus, this model only results in the partial removal of the impasse. With this practice, step 4 remains unnecessarily difficult. It exacerbates the challenge of learning to read. In spite of this difficulty, the practice of using the six tasks for meeting this challenge has carried the day from then on.

The theoretical base of causality was confirmed by the studies but not the practice. The practice of the teaching has not been thoroughly tested. **The most viable way to turn this premise into practice is left undecided by the NRP report.**

The most effective way of facilitating beginning reading with phonemic awareness remains in question. The blending task is the question. **The solution is to simply create a more explicit and easier way of blending that smoothly connects to decoding and gets reading started.**

How the oral blending task, from the six tasks, misses the mark is shown below.

**Oral blending:** (teacher) “What word is /s/ /a/ /m/?” “Say the word.” (child) sam

**Decoding blending:** (teacher) Show the word sam. “Say the sound for each letter.”

(child) /s/ /a/ /m/

(teacher) “Now say the word?” (child) sam

The decoding task follows the oral blending, with letters. The blending, in both cases, is not explicit. The last step remains, “say the word”. This kind of blending with pauses, with or without letters, is an advanced, difficult task for a child, at the start. It requires extensive, inefficient phonemic awareness training before being applied to decoding.

**There is an easier way of teaching phonemic awareness that smoothly leads into decoding. It involves a simpler form of phonemes, which is referred to as an early developmental form of phonemic awareness, before the abstracted segmented form is learned. It uses a continuously slow pronunciation of the sounds in words, without pauses. This action is applied to both phonemic awareness and decoding.** It has been in use for decades and can ease a child into learning a decoding

strategy earlier, when children are in kindergarten. This starts an early accumulation of a reading vocabulary and knowledge of the alphabetic principle.

The practice, seen in the box below, starts with oral stretching of the sounds of words, those that can be stretched, for blending a word. This gives practice in pronouncing the phonemes, which exposes the segments to the ear, out of hiding in normal speech.

This works as follows.

**Oral blending:** (teacher models): “Slowly say the word sssssaaaammm.”

(child) sssssaaaammm

“Say it fast.” (child) - sam “What word?” - sam “yes, sam.”

(see full [teaching progression for phonemic awareness and decoding.](#))

**Decode blending:** (teacher): (Show the word sam.) “When I touch each letter, say the sounds”

(child) /sssss/ /aaaaa/ /mmmmm/

“Now, follow my finger and sound out the word without stopping.”

(child) sssssaaaammm

“Now say it fast.” - (child) sam “What word?” - sam “Yes” sam

The oral practice, with lead-up lessons, is easily mastered within the first few weeks. It then can be applied in the same way, with letters, as a decoding strategy. This is where learning the alphabetic principle and reading words begins, which coincidentally, as described earlier, also further strengthens skills with phonemes as well.

This foundational way of teaching oral blending of phonemes is critical in beginning reading. (Weisberg, 1993) <sup>16</sup>. It was discovered by Engelmann in his teaching of 4 and 5 year old disadvantaged children. It is closer to a child’s speech, therefore easier to learn at first.

For Engelmann, the practice was first used as a decoding strategy. From this came the discovery that the same action without letters can provide the beginnings of phonemic awareness. Engelmann explains:

*“Some children we worked with could not identify the word (even) if they sounded it out. By teaching these children to sound out without pauses, they would actually be saying the word slowly (mmmmaaaat); this made it a lot easier for them to identify the word. <sup>17</sup>. (Engelmann, 2004 )*

*“The basic argument used for the necessity of the phonological manipulations was that they (the manipulations) were components of the corresponding decoding manipulations. . . .It is a verbal skeleton of the (decoding) practice. The responses the children make (for phonemic awareness) are the same responses the children make when decoding the word.” <sup>18</sup>. (Engelmann, 1999)*

This practice allows decoding instruction to be introduced to kindergarten children, much sooner than is typical (introduced by lesson 20). It allows for the start of a substantial reading vocabulary that also induces the reciprocal interaction between letters/ phonemes, to assure learning is firm. The resulting reading vocabulary of [400 words](#), made up of [40 phonemes](#) with matched letters, are [accumulated during the year by all children](#).

This practice results in a more feasible beginning of teaching reading in kindergarten, right within the first two months of the year. It does not include lengthy pre-teaching phoneme tasks or partial-alphabetic reading in stages or phases before formal instruction. All words learned are read in a full-alphabetic manner. In fact, fluent, automatic-alphabetic reading, in an appropriate decodable text, without sounding out letters, should be apparent as early as late kindergarten. Thus, kindergarten can be a time when automaticity of reading begins to take place where the brain takes over for decoding printed words the same as it decodes in listening to spoken words.

Because the pre-reading teaching of the oral blending exercise, within 3 to 4 weeks, does not require any decoding, a select number of letter/sounds can also be taught in the same lessons, from the first day. These skills are then combined for teaching a decoding strategy in the fourth week and progresses onward. As new letters are learned, they are applied to new words. Words and letters grow together. The oral blending exercise continues in each lesson , along side of the beginning decoding teaching , for another 20 lessons.

Training in the “six tasks” with segments can take place in coordination with these lessons, in a separate companion program, for further strengthening of phonemic awareness that includes segments of phonemes. <sup>19</sup> (See Lesson Connections-Grade K)

This approach has been demonstrated and documented over the past fifty years. Most recently, the Arthur Academy Charter schools in Portland, Oregon, have taught approximately 2500 kindergarten children since 2002. <sup>20</sup> ([Arthur & Stockard, 2013](#)) All their kindergarteners were able to read stories of 80 to 100 words as “sight words”, without sounding out the words, by the end of kindergarten.

(Steps: [Part One](#), [Part Two](#), [Part three](#).)

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