

Reference

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How to Avoid Reading Failure: Teach Phonemic Awareness.

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“My twin 7 year olds have been falling behind in reading and writing, possibly everything . There report card was all c's and beginning of reading and writing. Is there any help out there for us. If so Please let me know if there is some funding for there school or something.”

I received this email from a parent in Canada at the time I was writing this chapter. I sent it to one of the editors of this book, and she arranged for a family literacy center to contact the distressed parent. It was a message that I have received many times before. A letter I remember most was sent to me when I carried out a parent survey that asked questions about reading (Nicholson, 1999). The parent wrote to me: *“I have two children how [sic] need books bad. They are very backwood in their readying at school. How do I get the right books for them? I am give you my name and address would you let me know about the books for my children I hope so.”* I wrote to the parent and gave her a list of book titles, but felt badly because at the time there were no specialist services that I could recommend to her. There are more services available nowadays but there are still many parents who desperately need help for their children, yet schools struggle to find resources to help them.

In New Zealand, statistics indicate that up to one in four children have difficulties with reading. Ministry of Education figures show that 20 percent of 6-year-old children receive Reading Recovery tuition, though it is only accessible to 70 percent of schools. If all pupils had the service available to them, an estimated 26 percent would be receiving this extra tuition (Kerslake, 2001). The situation is similar in other places as well, such as England, Australia, Canada and the United States (Nicholson, 2000). The current New Zealand statistics may be an underestimate since in the most disadvantaged schools, located in low-income parts of the country, there are far more 6-year-old children with reading difficulties than there are Reading Recovery teachers. The situation for older children is worse. Even though the New Zealand government recently doubled the numbers of specialist teachers to 120. They are called Resource Teachers of Literacy, and they have now been given formal training in the form of four courses on reading. Yet at present time for every specialist teacher there are many children who need help. The official figure is 12 students on a waiting list for every reading specialist but this may be an underestimate. According to an IEA international survey in 1990, the mean number of New Zealand grade 3 students in need of reading help but not receiving it was 1.40 per class. Given that there are about 2,000 primary schools in New Zealand, this suggests a long waiting list at grade 3, let alone across the 12 school grades. The report mentioned that the mean per grade 3 class for all countries in the survey, including Canada and the United States, was 1.60 (Wagemaker, 1993).

When governments become aware of poor literacy rates the first response is to spend more money on interventions. Yet there are several reasons to be cautious about relying only on this approach. First, many interventions do not deliver on their promises. An example is Reading Recovery in New Zealand, where results have not matched expectations (Elbaum, Vaughn, Hughes, & Moody, 2000; Glynn, Crooks, Bethune, Ballard, & Smith, 1989; Hiebert, 1994; Nicholson, 1989; Shanahan & Barr, 1995; Tunmer, 1990; Tunmer, Chapman, Ryan, & Prochnow, 1998). For a long time it was believed that children who fell behind in the first year of school could easily catch up again through Reading Recovery. Although large numbers of children went into Reading Recovery the common belief was that almost all of them would catch up to their classmates at the end of the intervention. A steady accumulation of research now indicates that Reading Recovery does not provide enough help to give these children the long term catch-up skills they need. A possible reason for this is that Reading Recovery does not provide sufficient

attention to the teaching of phonological decoding skills. Children at entry to Reading Recovery programs tend to be very low in phonological awareness skills, and these skills do not seem to improve sufficiently during the program (White, Fletcher-Flinn, & Nicholson, 1999).

Second, young children should not have to get to the point where intervention is needed. Once children start to fail, they lose confidence in themselves. It is better to get as many children as possible off to good start at once, rather than put them into a catch-up program when they are older. When the whole language approach to teaching reading was first introduced in New Zealand there was an expectation that all children could learn to read by reading, without having to have a strong classroom focus on the teaching of phonological recoding skills. However, research over the last several decades has shown that whole language is more effective for children who start school with good alphabet recognition and phonemic awareness than it is for children to start school lacking such skills (Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh, Z, & Shanahan, 2001; Tunmer, Chapman, & Prochnow, 2002). In the last several years the Ministry of Education has commissioned Task Force reports to address this issue, especially the disparities in reading between rich and poor schools, and between European, Maori and Pacific Island children. Each report has recommended increased attention to the teaching of phonological recoding skills (Ministry of Education, 1999). The need for a more phonological approach to the teaching of reading has been even strongly stated in a recent Education and Science Select Committee Report, *Let's All Read* (Education and Science Select Committee Report on Reading, 2001). There have been similar recommendations in the United States (National Reading Panel, 2000). Children with poor phonological skills at entry to school benefit from instruction that targets these skills. We need better initial teaching that benefits the maximum number of children. At the present time in New Zealand, and in many other places as well, too many children are not learning to read.

Third, we need to think outside the school day, to external services such as family literacy centers, summer schools that focus on reading skills, and after-school reading centers to provide parents with additional options for their children. These services should be especially available to parents who lack the financial resources to pay for private tuition. In the School of Education at The University of Auckland, we have introduced an after-school reading program with specially trained tutors who work with struggling readers using research methods that focus on phonological recoding, and the results are very encouraging (Nicholson, 2003,2004). Research is continuing in order to see if this tuition has lasting effects, since long-term success is the litmus test of every intervention.

The Phonological Approach to Teaching Reading

There is an increasing consensus among researchers around the world that schools must include from the first days of schooling a strong phonological approach in the teaching of reading. There is converging evidence from many studies that children who experience difficulties in learning to read do not understand how to recode words phonologically, that is, they do not know how to blend the sounds of letters together to realize the spoken forms of written words. A major challenge for the beginner reader of English or any language that uses an alphabetic writing system is to become consciously aware that words are composed of phonemes, and that these phonemes are encoded in the letters of written words. Phonological awareness has a strange role in learning to read because it is an unnatural awareness to acquire. However it plays an important role and has to be taught.

What is Phonological Awareness?

Phonological awareness is part of a more general metalinguistic awareness that appears in middle childhood. During this period, from about five to 12 years of age, children become more conscious that the language they speak has a structure, that sentences are made of words, that they have grammatical rules about what is acceptable or not, that words are composed of syllables, and that syllables can be broken into smaller units, down to the phoneme level.

Phonological awareness is broader than the phoneme. It includes syllable awareness, as well as awareness that the syllable itself can be broken into its onset and rime.¹

A child has the beginnings of phonological awareness when he or she can break a spoken word into syllables (e.g., cow-bell). The next level of awareness is the ability to break syllables into onsets and rimes (e.g., /c/-/ow/, /b/-/ell/). If the child can tell you the first sound in a one syllable word such as /fish/, then the child is showing awareness that /fish/ has an onset that can be separated from the rest of the syllable. The child has some awareness of the phonological structure of a word, but does not have full phonemic awareness (Share, 1995). The child who has phonemic awareness has the ability to segment a spoken word completely into all of its phonemes (e.g., the sounds in /fish/ are /f/-/i/-/sh/.)

What is Phonemic Awareness?

Phonemes are the smallest distinctive sound units in a language. In English, for example, there are 40 phonemes. Other languages have more or fewer phonemes than in English. Phonemes are abstract concepts in the mind because each phoneme can vary in terms of its phonetic quality in speech. This is why phonemic awareness is not a naturally acquired skill.

Is Phonemic Awareness Like Phonics?

Some publishers say their programmes teach phonemic awareness when they really mean phonics. Phonics is a way of teaching how to associate letters to sounds, so as to sound-out words in reading. It assumes phonemic awareness but does not necessarily teach it. In contrast, phonemic awareness instruction involves teaching how to analyse sounds within spoken words, not written ones. The easiest way to distinguish phonemic awareness from phonics is to ask yourself, is this activity just focusing on spoken language, or am I teaching alphabet letters as well? If you are teaching about how letters correspond to phonemes, then you aren't teaching phonemic awareness. You are teaching phonics. When teaching phonemic awareness the teacher will use spoken words, or illustrations, but will not use letters of the alphabet. In practice, though, it is hard to resist combining phonemic awareness instruction and phonics. It is not only hard to resist but it also is more effective than teaching phonemic awareness on its own (Bradley, & Bryant, 1983; Coles, 2000; Krashen, 1999; Mann, 1991; Nicholson, 2000; Share, 1995).

Is Phonemic Awareness Like Phonetics?

Phonetic analysis is a way of describing how speech sounds are made. It is not phonemic awareness and it is not phonics. What is the difference? In phonetics, the interest is in the phone, that is, the way the phoneme is expressed. For example, the same phoneme can sound slightly different in different words, because of the sounds that precede or follow it. The /p/ in pin is different phonetically to the /p/ in spin or nip. You can easily tell this by holding your hand to your mouth when saying these words. There is a puff of air when you say pin, less so when you say spin, and not at all when you say nip. Another example is the sound of /b/ when you say bunny or big or beautiful. They are slightly different phonetically, though we hear them as the same phonemes. A phonetician is interested in such small variation (called allophonic variation). But phonemic awareness is not concerned with that. In teaching phonemic awareness we want the child to break free of phonetic sensitivity, and realise that sounds like the /b/ in bunny and bounce are phonemically the same. Thus phonemic awareness is the abstract ability to think about the sounds of words separately from their spellings, and separately from the slight phonetic variations that occur within the structure of phonemes.

Testing for Phonological Awareness

Tests of phonological awareness usually involve looking at pictures of objects, or else listening to spoken words. The assessment of phonological awareness includes awareness of syllables in words (e.g., "Can you say bunny without the ny?") and awareness of the onset-rime

¹ The onset is the beginning consonant(s) and the rime is the remainder of the syllable, including the vowel and optional consonants. Thus, the onset of "cat" is "c" and the rime is "-at". The rime (e.g., at) can be broken into peak (a) and coda (t).

structure of syllables (e.g., “I’ll say the sounds in Mike. M-ike. Now, can you say the sounds in Shop?”). A phonological awareness test will assess children’s developmental knowledge of syllables, onset-rime, and phonemes. But a phonemic awareness test will assess only awareness of the phonemes in words.

Phonemic awareness does not just happen overnight. Instead, it dawns gradually across the word. The stages, according to Gough, Larson, & Yopp (1993) appear to be: (a) Can blend phonemes (e.g., m-a-t), (b) Can isolate the last phoneme (e.g., /m/ in thumb), (c) Can isolate the first phoneme (e.g., /f/ in fish), and (d) Can delete a phoneme (e.g., spot = pot)

Some tests of phonemic awareness are easier than others. It is easier for a child to say what is left if we take the last sound (/t/) off meat (answer is me), than it is to say what is left if we take the off first sound (/m/) of meat (answer is eat.) This is because it is mentally harder to take off a beginning phoneme than an ending one. Also, it is easier for a child to verify to you that cat and hat rhyme than it is for the same child to think of a word that rhymes with cat. Why? The reason is that the cat-hat task gives the child a 50% chance of being right. To think of another word is much harder. The key skill of phonemic awareness is that the child has to ignore the meaning of a word and focus on its form. The child has to think about sounds in words, not meanings of words. This can be difficult. For example, a 5-year-old who can only think of the meaning in a word is likely to say that the sounds in cat are meow.

What Phonemic Awareness Test Should I Use?

A test of phonemic awareness that I strongly recommend is the Gough-Kastler-Roper Test of Phonemic Awareness. It was developed at the University of Texas at Austin and has reliabilities greater than $r=.70$. My own longitudinal research shows that phonemic awareness, along with alphabet recognition, are very good predictors of children’s reading progress through the first five years of school. Children with poor alphabet recognition and low phonemic awareness at school entry are likely to have difficulties in learning to read. Alphabet recognition at school entry is a very good predictor of reading success in the first year of school, but phonemic awareness is a better predictor of success after that (Nicholson, 2003).

A Short History of Phonemic Awareness Research

Research on phonological awareness and reading is quite recent (Leong, 1991). Researchers in Moscow in the 1960s (e.g., D.B. Elkonin) were aware that preschool children lacked phonological awareness. This was called glass theory (Elkonin, 1971, 1973). For beginner readers it was as if spoken words were a glass through which the child looked at the world. If children could be taught that the glass was there, then they would have phonemic awareness. The Russian researchers wanted to put a smudge on that window in the mind, so that the child became aware that words could be analysed in terms of their sounds.

In the 1960s, at the same time, United States researchers were also tackling the phonological awareness problem. Alvin Liberman (1968, cited in Bertelson & de Gelder 1993, p. 394) wrote that if phonemes "are real they are not necessarily real at a high level of awareness. That is to say, it does not follow from anything I have said that the man in the street can tell you about phonemes, or that he can even tell you how many phonemes there are in particular utterances." Isabelle Liberman in 1970 presented a paper in which she also linked phonological awareness with the task of learning to read (cited in Bertelson, & de Gelder, 1993). Looking back, it seems clear that the Russian researchers had an intuitive understanding that phonemic awareness was a problem for school beginners. But the American researchers had a better understanding of why it was a problem. They had done the speech research that showed how phonemes were not like beads on a string (A. Liberman, 1996, 1998, 1999). They had found that phonemes do not exist separately in the speech stream. Instead, information about particular phonemes is also found in phonemes that precede and follow them. This process of phonemic overlap is called parallel transmission. This is why it is difficult mentally to split phonemes off from spoken words. We can learn to do it but it doesn’t come naturally. Some phonemes can be said in isolation (e.g., /m/ and /s/), but others are not like this For example, it is impossible to pronounce the phoneme /b/ in bag separately from the /a/ that follows it. If we try to say /b/ on its own, we say /beh/, which is two phonemes. Thus, children have a difficult task in learning about phonemes.

The following studies are given as examples of the large number of studies that have been carried out since the 1960s.

A 1960s study from England found that many children had difficulty with deletion of phonemes (Bruce, 1964). For example, when asked to say what word would be left if the s were taken from the middle of nest, one child said, "I can't actually do it. You see, I can't say the last letter without the middle." (Bruce, 1964, p. 169)

A 1970s study in the United States, found that only 20% of 5-year-olds could tap the number of phonemes in words like ice (2) and spy (3) (Please provide reference re APA – (Lieberman, Shankweiler, Fischer, & Carter, 1974).

Oxford researchers in England in the early 1980s found that older, poor readers were significantly worse than younger, average readers in picking one word out of four that did not follow the same phonological pattern (e.g., weed, peel, need, deed, where peel is the odd one out) (Bradley, & Bryant, 1978).

A longitudinal study in the 1980s in the United States found that children who became poor readers entered first grade with little or no phonemic awareness. In contrast, children who became good readers entered first grade with much higher levels of phonemic awareness (Juel, 1988).

Recent Debates on Phonemic Awareness

Some whole language writers have questioned the research on phonemic awareness instruction. They say that training studies have improved phonemic awareness and also reading of made-up words, but not real words in real text (see Coles, 2000; Krashen, 1999; McQuillan, 1998). They argue that training studies have short-term effects that disappear when children are assessed one and two years later. Their solution is that the problems lie in the home, and that parents must do more to build literate environments. The problem with their solution however is that many families do not have the financial or emotional resources to do this. In many poor homes, day to day living is a struggle. It is difficult for these parents to provide their children's education as well. Some children also come from violent homes, others from homes where they are neglected, and some from homes where they have complete many hours of chores and help care for siblings. As Horin (1995, p. 2) put it, asking parents to read to their children "may not work for kids whose lives already lack structure and whose parents, coping with unemployment, desertion, violence, or illness, may not feel like a cosy read at night." Of course, it will be possible to help some families to provide more literate environments for their children, but this will never be the whole solution. The school, or some additional after-school service, will always be needed to help children who start school without the home environment advantages of other children. Children who lack alphabet and phonemic awareness skills on entry to school will have to be taught these skills outside of the home.

Other criticisms of the effects of phonemic awareness studies have highlighted design flaws in the research (Troia, 1999). Scientific design flaws include lack of random assignment to treatment conditions, failure to control for Hawthorne effects, poor measurement sensitivity, insufficient attention to fidelity of treatment, and inadequately described research samples.

A way to answer these criticisms is to look at the weight of evidence from a large number of studies, rather than get bogged down in particular studies. This is called meta-analysis. What happens is that the effects of all the training studies are averaged out to assess their general significance. A recent meta-analysis that looked at effect sizes in a number of studies concluded that the case for training effects from phonological awareness instruction was so strong that, "About 500 studies with null results in the file drawers of disappointed researchers would be needed to turn the current results into non-significance" (Bus & van Ijzendoorn, 1999, p. 411). The National Reading Panel, a United States government appointed body of reading experts, also did a meta-analysis of more than 40 peer-reviewed and published articles that were relatively free of design flaws. A summary of part of the findings of the panel was recently published in Reading Research Quarterly (Ehri, et al, 2001). The researchers concluded that children's reading progress was more likely to benefit if it was accompanied by phonological awareness instruction.

Teaching Phonemic Awareness

Elkonin (1973), a Moscow researcher, was one of the first writers to discuss the teaching of phonemic awareness. He taught preschoolers to segment spoken words. The child would name a picture (e.g., gusi is Russian for goose), and then say the word sound by sound (e.g., g-u-s-i), at the same time putting down a cardboard chip (different colour for consonants and

vowels) for each sound. Children in kindergarten and first grade were able to learn how to analyse sounds in words in ten to twelve lessons.

Bradley & Bryant (1983) reported that 5-year-old children who received phonological awareness training, along with the use of letters of the alphabet, for two years of instruction, made significant gains in reading and spelling. In a similar vein, a one-year Scandinavian training study produced significant gains in the phonological awareness skills of preschool children before they began formal schooling. Follow-up assessments of the progress of these children found the training contributed to reading progress two years after the training had ended (Lundberg, Frost & Petersen, 1988).

Oxford researchers in England found that children's knowledge of traditional English nursery rhymes at three years of age strongly predicted their reading ability at six years of age (Bryant, Bradley, Maclean, & Crossland, 1989). Another study in England reported that pre-reading children in nursery school (i.e., 4-year-olds) responded better to rhyme activities (e.g., What is wrong with this: Jack and Jill / Went up the road?) than to training involving word onsets (Layton, Deeny, Tall, & Upton, 1996). A difficulty with training of onsets is the concept of beginning sound. Phil Gough (personal communication) has suggested using I Spy games to teach preschoolers about beginning sounds (e.g., I spy with my little eye, something beginning with /f/ (where the first phoneme is said, not the letter name of the thing that is spied).

A New Zealand study found that phonemic awareness training when added to a whole language programme had a positive effect on 5-year-old children's reading and spelling progress (Castle, Riach, & Nicholson, 1994). Children received phonological awareness training that focused specifically on phonemes. Researchers taught slowed pronunciation of words (e.g., What word is mmmm-ou-sss?), segmenting of the initial phoneme (e.g., What is the first sound in bbbbb-bear?), rhyme (e.g., Which pictures rhyme? – the child looks at pictures of log, dog and sun), phoneme deletion and substitution (e.g., Say cat. Now instead of cuh, let's start it off with m.), and complete phonemic segmentation (e.g., using the Elkonin method, where the child places counters in square boxes below the picture of an object, one counter for each sound in the word). The odd-one-out game focused on full segmentation (e.g., Which of these pictures does not start with the same sound as the others? Show pictures of apple, ball, and ambulance.) (Castle, 1998). Note that in these studies teaching phonemic awareness is usually done verbally, without using letters of the alphabet. The focus is on teaching children to hear sounds in words, not to relate sounds to letters.

A design difficulty with some of the research on phonological awareness is that phonological training has been accompanied by reading instruction, which makes it difficult to know whether it is the phonological awareness training or the reading instruction that makes the difference. So there is a possibility that phonemic awareness is a result of learning to read rather than a result of phonological awareness instruction by itself. It can be argued that the process of learning to read teaches children phonological awareness. The invisible nature of phonemes is made visible in print. As children learn to read, they are exposed to the sounds of letters. The names of letters enable some children intuitively to analyse letter-phoneme correspondences (Treiman, 1993). Children who are invented spellers use letter names to write words phonemically (e.g., KAT for cat). Read (1978) who was the one of the first researchers to study the phenomenon of invented spelling among preschoolers, that is, children who used letter names as clues for spelling words, argued that the emergence of phonemic awareness while learning to read was "highly suspicious" (p. 73) in that teaching reading probably facilitates phonemic awareness. However, the weight of studies nowadays indicates that phonological awareness is an important prerequisite in learning to read. It helps children get off to a better start in reading and spelling (Ehri et al, 2001).

Which phonemes to teach?

What level of phonological awareness does the teacher aim for? Do you have to aim for complete segmentation ability (e.g., where the child can explicitly segment all of the sounds in cat)? Some researchers argue that children need full segmentation skill, since this will make it easier for the child to infer letter-sound correspondences (Gough et al, 1993). Training activities such as blending can facilitate segmentation skills. For example, a blending activity is where the teacher says each phoneme separately, as in t-r-u-ck and asks the child to tell her the word she has said (i.e., truck). Where do you start? One simple approach is to start with the 26 typical

phonemes that go with the letters of the alphabet. Teach the common sound for each consonant (e.g., geh for goat, c for cat), and the short vowel sound for each vowel (e.g. a as in cat). Start with the phoneme a, then b, then k, then d, and so on. Later you can teach other phonemes such as sh, ch, and so on. An alternative is to start with a limited set of phonemes. Then add others later. In one study, researchers used large posters with many illustrations of same-sounding objects (Byrne, & Fielding-Barnsley, (1991). The program they used, which they developed themselves, was called Sound Foundations. They focused on commonly occurring phonemes: s, m, p, g, l, t, sh, as well as the two vowels a and e. They taught children to recognise the consonant phonemes at the beginning of words (e.g., g in goat) and at the end of words (e.g., g in dog). They only taught the beginning vowel phonemes. They used posters with lots of pictures starting with a particular phoneme (e.g., a in ant, axe, anchor, astronaut, apple) or ending with a phoneme (s in mouse, house, nurse, moose). They taught beginning phonemes first. Then they moved to final position phonemes.

How to Pronounce Phonemes

There are approximately 40 phonemes in English. These phonemes are each represented by a special phonetic code (Treiman, 1993). An example of a common spelling of each phoneme is presented in Appendix A to the chapter. When you are teaching phonemes, especially stop consonants, you will have to add an “eh”. For example, sometimes you need to use the iteration technique “beh, beh, beh, bottle” to get the concept of /b/ across, even though the actual phoneme b does not have “eh” attached to it. Children will usually figure out that the “eh” is an addition to the actual phoneme.

To reduce phoneme distortion, it is useful to introduce continuant phonemes at first, to make the segmenting task easier (e.g., f, m, n, s, v, z, and r, l). These phonemes can be stretched but still have the same sound (e.g., ffffff). The stop sounds, with eh attached, can follow later (e.g., b, d, g, k, j, p, t). Start with the initial phonemes (e.g., s in sun). Then teach final phonemes (e.g., n in sun). Then teach middle phonemes (e.g. u in sun).

Possible Teaching Strategies

In what follows, some possible teaching strategies are listed (Calfee & Patrick, 1995; Nicholson, 1999).

1. Lip-popper technique. Teach children to attend to their articulation, so as to understand how a phoneme is made (). For example, rather than ask the class to listen carefully to the p in pig, demonstrate how to articulate the p (e.g., pan, pop, top). Children close together and pop their lips as they say the phoneme /p/. Some teachers ask children to look into a hand mirror to see what they tongue and lips do when they form each phoneme. Other sounds are tongue-tipper (e.g., t and d) and tongue-back (e.g., k and g.) Nosey sounds (hold your nose), are m, n, and ng.

2. Game-like onset-rime activities, described below, include I Spy, Turtle Talk, Bingo, the Elkonin technique, and Making and Breaking. In the I Spy game, it is possible to segment the onset (i.e., initial phoneme) of spoken words. Use toys and objects, lay them out on the floor, like a toy mouse, a toy dog, a rubber fish, a rubber duck, a clothes peg, sunglasses, a toy sheep, and so on.

Teacher: I spy with my little eye, something that starts with the “sound _____.” Then you say a particular sound, like M.

Children: “Is it a dog?”

Teacher: “No. It starts with the sound of MMMM.”

Children: “Is it a MOUSE?”

Teacher: “Yes, that’s right. Can you all say the sound that’s at the beginning of MOUSE? That’s great. Yes, the sound is MMMM.

Another version of I Spy involves asking children to listen for the sound that is at the end of the word. This is harder because children have to segment the final phoneme, whereas the more natural break is the initial phoneme. Thus, make sure objects are easy to spy and use no more than three objects.

Teacher: “I spy with my little eye something that ends with the sound sh.”

Children: “Is it a FISH?”

Teacher: “Wow. Excellent. Well done. Can you all say the sound at the end of fish?”

The game, Turtle Talk, can be used to reduce distortion of phonemes is to say the word slowly (e.g., b-o-tt-le). Use a turtle puppet to talk turtle-talk. The teacher says to the children, "Is a turtle faster than a rabbit or slower?" The children all agree that the turtle is very slow, compared to a rabbit. The teacher then asks, "Do you think a turtle will also talk slowly?" The children may not be too sure about this, but will probably agree. Then the teacher shows the puppet and explains to the children that this turtle talks very slowly, but that they should try to understand what the turtle says. "M-OU-SE", says the turtle. The teacher asks, "What did he say?" The children then say the word, mouse. As children understand what is involved, they can take turns to talk back to the turtle very slowly. This activity is a good way of teaching children to blend the phonemes in words.

In the Bingo game, each child has a bingo card. The teacher has a pack of picture cards, which he/she places face down on the floor. The child picks up a picture card. Does the initial phoneme match one of a series of pictures on her bingo card? If child can make a match, the child puts a counter on the matching picture on her card. Then puts picture back on floor. First child to fill up the bingo card wins the game.

The Elkonin technique requires the child to do full segmentation of phonemes in the word. Draw a table. Child selects a picture card and has to place counters in each cell of table, according to number of phonemes in the picture name. The child says the name of picture slowly (e.g., t-r-ai-n), while placing a counter in each cell as each phoneme is said. Later, letters are introduced to replace counters

In the Making and Breaking activity (Clay, 1993), the whole class can delete and add phonemes. This activity can be done verbally at first, without using letters. For example, "Everybody say and. Now put s at start of and. That's right, sand. Now take off the s and put b in front of and. Now take off br and replace it with st. Once children can do this activity, introduce alphabet cards or magnetic letters to show how to add and delete phonemes to make new words. *After Phonemic Awareness, What?*

Phonemic awareness by itself is not enough to learn to read. The child who can read has learned to decode. This means teaching the child phonics, which enables the child to apply letter-sound knowledge to the decoding of written words. Phonics however will make little sense to the child unless there is a foundation of phonemic awareness. Once the child has at least some phonemic awareness, instruction in phonics can begin. Teaching phonics requires considerable instruction, and should be taught systematically. The approach we have found most successful is that devised by Robert Calfee and associates at Stanford University, called Project Read (Calfee & Patrick, 1995). We have adapted it for struggling readers who attend our after-school reading programme and have found that it is an effective approach. It starts by teaching the letter-sound rules of the everyday words of English of Anglo-Saxon derivation. When these rules are learned, the focus moves to teaching how to read the large number of borrowed words that have come into English from Latin, French and Greek (Nicholson, 2004). First however the child has to acquire the letter-sound rules that apply to the most common words in English. These are the words that beginners must first learn to decode. This means learning Anglo-Saxon letter-sound associations as shown in Appendix B to this chapter (Nicholson, 1997).

Conclusion

Children get off to a better start in learning to read if we introduce phonemic awareness instruction as early as possible, even before beginning to teach the alphabet. Phonemic awareness can be taught without using the letters of the alphabet, although teaching phonemes together with letters is more effective. The research suggests it is better to teach phonemic awareness than wait for phonemic awareness to dawn on the child, since many beginners have no idea that spoken words are made of sounds, or that letters in words represent phonemes. The sooner children realize that words are made up of phonemes, the sooner they will be able to crack the alphabetic code and begin the process of learning the letter-sound rules of English. The child who can use letter-sound rules is able to read words on his or her own, which means that the door to the world of books has begun to open. The key to that door, however, is phonemic awareness.

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Appendix A. Common spellings of each phoneme

Consonants		Vowels	
Phoneme	Example	Phoneme	Example
b	bin	i-e	tie
d	did	ow	cow
j	jug	a	at
th	the	o	on
f	fun	ai	rain
g	girl	e	end
h	home	u	up
y	young	ee	see
k	cat	i	it
l	dog	o, ow	so, row
m	my	oi	oil
n	no	or, au	for, sauce
ng	sing	oo	roof
p	pop	oo	foot
r	run		
s	sun		
sh	ship		
t	to		
ch	chin		
v	van		
w	wok		
z	zoo		
s	treasure		
th	think		

Appendix B. Anglo-Saxon letter-sound correspondences

Anglo-Saxon words are the words of the Angles and Saxons, who inhabited England before the Romans arrived. They are the common words of English. Later additions to English came from Latin words (Roman invasion), French words (French invasion), and Greek words (scientific terms). English has words from more than 100 different languages.

Letter-sound correspondences in Anglo-Saxon

- Consonants are all letters except a,e,i,o,u. In English there are 21 consonants. In Anglo-Saxon words, each consonant has one sound [except c (cup, cent), g (go, gell)]
- Consonant blends are 2 or 3 adjacent consonants in same syllable (e.g., cl, gr, str), but each consonant keeps its own sound
- Consonant digraphs are two adjacent consonants in one syllable (e.g., ch, sh, th, wh) that have single sounds different to their own
- Vowels are a,e,i,o,u. They each have two sounds (short, long). The short and long sounds are marked. There is a silent e marker for the long sound (as in made, like – exceptions are: have, give, live etc). there is a doubling marker for the short sound (e.g., scrubbing, rapping)
- r- and l- affected vowels have unique sounds (ar, er, ir, or, ur, all) that are different to their short and long sounds
- Vowel digraphs are two adjacent vowels that have one sound (as in oat), or two sounds (as in cow, tow). Vowel digraphs that end in i (rain) or u (sauce) change to y (say) or w (law) at the end of word

Decoding Anglo-Saxon words

- Children learning to read English usually start to learn to read with books that contain Anglo-Saxon words.
- Unfortunately some common words have weird spellings (e.g., the, to, was, come, do, break, who, could, rough). They have to be learned as “sight words” through lots of practice
- Most Anglo-Saxon words have one or two syllables. If the word has two syllables it is easier to read if the child knows how to break the word into syllables (see below)
- Compound words are common in Anglo-Saxon (e.g., “rain-coat”)
- There are some prefixes – e.g., dislike
- There are some suffixes – e.g., likelyy

Dividing words into syllables

- Every syllable has a vowel sound
- Sometimes a vowel digraph is used to represent one vowel sound (e.g., bee-per)
- Sometimes a word will have a vowel does not have a sound, i.e., the silent e (e.g., likee). If vowel has no sound, then it does not signal a syllable
- There are some helpful rules for dividing syllables. One rule is divide two syllable words after the first vowel (e.g., shi-ny). Another rule is if the vowel is followed by two consonants divide between the consonants (e.g., ten-nis)