

## Research Brief 2

# Systematic synthetic phonics

### What is phonics?

Phonics is knowledge of how the sounds we hear in spoken words are represented by the letters we see in printed words. Written English is an alphabetic code, and phonics instruction teaches children to ‘decode’ words in order to read them accurately and fluently.

Extensive research has shown that phonics knowledge is predictive of reading ability.<sup>1</sup> As explained by Professor Kate Nation: “While reading comprehension requires much more than the identification of individual words, comprehension cannot happen without it.”<sup>2</sup>

### The English alphabetic code

There are approximately 44 sounds or ‘phonemes’ in spoken English (depending on national and regional accents) and the 26 letters in the alphabet are combined in more than 200 ways to represent these sounds in written English.

A letter, or cluster of letters, that represent one sound or phoneme is called a ‘grapheme’. For example, /f/ and /ph/ are graphemes that represent the same sound or phoneme. Some graphemes only represent one phoneme (for example, /m/) while others – especially vowels – can represent numerous phonemes.

Written English is more complex than other alphabetic languages, making it difficult to work out the relationships between letters and sounds without good instruction.<sup>3</sup> Some children learn the English alphabetic code relatively quickly, but the research outlined in this Research Brief shows that the best way to ensure that *all* children learn to decode words is to teach the letter-sound relationships — phonics — in an explicit and systematic way.

### Systematic synthetic phonics

With systematic synthetic phonics (SSP), teachers build up phonic knowledge from the smallest sub-word units — phonemes and graphemes. Phonemes and graphemes are taught in a carefully planned sequence, usually beginning with a selection of vowels and consonants that can be used to make numerous simple words, for example a, m, s, t, i, p. The exact number of letters is not important — not so few that it is difficult to make words, but not so many that it overloads working memory.

In SSP, the processes of blending (“What word do these sounds make when we put them together: mmm-aaa-p?”), and segmenting (“Sound out this word for me: sit”) are taught early and intensively.

New graphemes are introduced cumulatively and quickly with regular revision, practice and formative assessment — this is the systematic element. Common digraphs (two letters that make one sound) such as /sh/ are often introduced early in the sequence to allow children to read a wide variety of words as quickly as possible.

Instruction is explicit, meaning that children are first directly taught the letters and sounds, which are then embedded in the context of meaningful words and sentences. SSP does not start with analysis of larger sub-word units like onset and rime in familiar words (eg. in the word ‘bike’, /b/ is the onset and /ike/ is the rime).

SSP instruction does not restrict children to learning about the letters, sounds, and spellings that they are being taught in their phonics sequence. Incidental learning can be included in a ‘two-pronged’ approach to phonics instruction, with the phonics sequence being complemented by the words children see in environmental print and in books. The reason for a sequence is to ensure that students’ phonics knowledge is secure and there are no gaps.

SSP can also accommodate students with different levels of reading ability by differentiating at the point of practice and independent work. For example, in whole-class SSP, children will all progress through the phonics sequence but the tasks they are given to consolidate their learning can differ in complexity.

## Synthetic phonics does not mean fake words

In the context of SSP, 'synthetic' means building from the smallest parts. Making and reading nonsense or pseudo words are sometimes included in SSP programs for valid instructional reasons, including helping to develop advanced phonemic awareness and blending skills. It is worth remembering that when breaking words into syllables for decoding, syllables on their own are not 'real' words.

Nonsense words are a useful form of assessment. Decodable nonsense words (for example, 'welf') are included in a number of standardised reading assessments, including the Motif assessments and the Year 1 Phonics Screening Check. Because these words would not have been seen by children before, they cannot read them as whole 'sight words' so they are a relatively pure way of assessing decoding ability.<sup>4</sup>

## Synthetic phonics is not costly

There are a number of well-designed, rigorously-tested and research-based SSP programs available for schools to purchase, as well as comprehensive literacy programs with strong SSP components. These programs offer good training to teachers and provide them with useful teaching resources.

These programs accelerate the implementation of SSP, especially in schools where teachers lack confidence and/or time to methodically prepare a SSP program.

However, in schools where there are teachers who have sound knowledge of reading development, the linguistic structures of the English language, and effective, evidence-based teaching strategies, a SSP program can be developed in-school, complemented by plentiful resources available online, often free of charge.

## Decodable books are important

Decodable books contain simple stories using only the letters and sounds children have learned in the phonics sequence, as well as a small number of high frequency words. Decodable books encourage children to practice reading using the phonics they have learned.

Decodable books should not replace children's literature. Good children's stories and non-fiction books should still be included daily in shared reading and for enjoyment. Decodable books ideally should be used in the initial stages of learning to read. Once the alphabetic principle is secure and children have acquired a sufficient level of phonics to independently and successfully decode unfamiliar words, other books can be introduced for reading practice.<sup>5</sup>

## Systematic synthetic phonics is based on scientific evidence on how children learn to read

There have been hundreds of studies of the cognitive processes involved in developing skilled reading.<sup>6</sup> When children are first learning to read, they need to build neurological connections between the parts of the brain that store letters (visual information) and sounds (phonological information).<sup>7</sup> This seems to happen almost effortlessly for some children; but others — such as children with dyslexia — need multiple exposures for this information to be retained in their long-term memory. The word that is read must then find a match in the semantic (meaning) area for comprehension.<sup>8</sup>

Eye-tracking studies and research on the effect of letter position on reading rate shows that both novice and skilled readers attend to all of the letters in a word when reading, rather than memorising whole words by their shape.<sup>9</sup> This is why using phonics to decode unknown words is a more efficient strategy than using the semantic (meaning) and syntactic (grammatical) context as 'cues'.<sup>10</sup>

Novice readers — whose exposure to printed words is limited — decode most words consciously as they read. Over time, a process called 'orthographic mapping' takes place, where frequently read words are remembered as unique letter strings, and are recalled almost instantaneously. Skilled readers still decode new or unfamiliar words more consciously.<sup>11</sup>

The most effective teaching approaches are those that are informed by the evidence of how children learn to read. Systematic and explicit approaches to phonics instruction facilitate the development of the scientifically-validated cognitive processes that lead to skilled reading. SSP is the specific method that most closely aligns with the characteristics of effective teaching.

Systematic literature reviews in the USA and England have found systematic, explicit phonics instruction to be more effective than non-systematic methods (such as whole language or whole word).<sup>12</sup> Expert reviews in Australia and in England considered evidence from a wider range of research, and concluded that SSP in particular was highly effective.<sup>13</sup>

An analysis of reading instruction and achievement in England — conducted after SSP was mandated in 2005 — found the adoption of SSP approaches had led to significant improvements in reading, particularly among children with the greatest risk of reading difficulty.<sup>14</sup> While there is evidence that phonics instruction in England has improved, it still generally falls short of exemplary; therefore the potential overall gains might be muted.<sup>15</sup>

Studies of high performing primary schools in England and Australia have found that high quality SSP is a common factor.<sup>16</sup>

## Summary: Evidence for the effectiveness of systematic synthetic phonics (SSP)



- The instructional principles of SSP align with the scientific evidence of the cognitive processes involved in learning to read.
- The features of SSP exhibit the characteristics of systematic, explicit instruction identified in large-scale reviews of effective reading instruction.
- There is consistent evidence that SSP leads to greater reading gains than non-systematic approaches, and some evidence it is superior to analytic phonics (more research is needed).
- SSP is a common factor in studies of high-performing primary schools.

### Endnotes

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