

Preliminary Report on the Reading Speed Research Project

[For distribution to Parkstone School Governor, Staff & Parents]

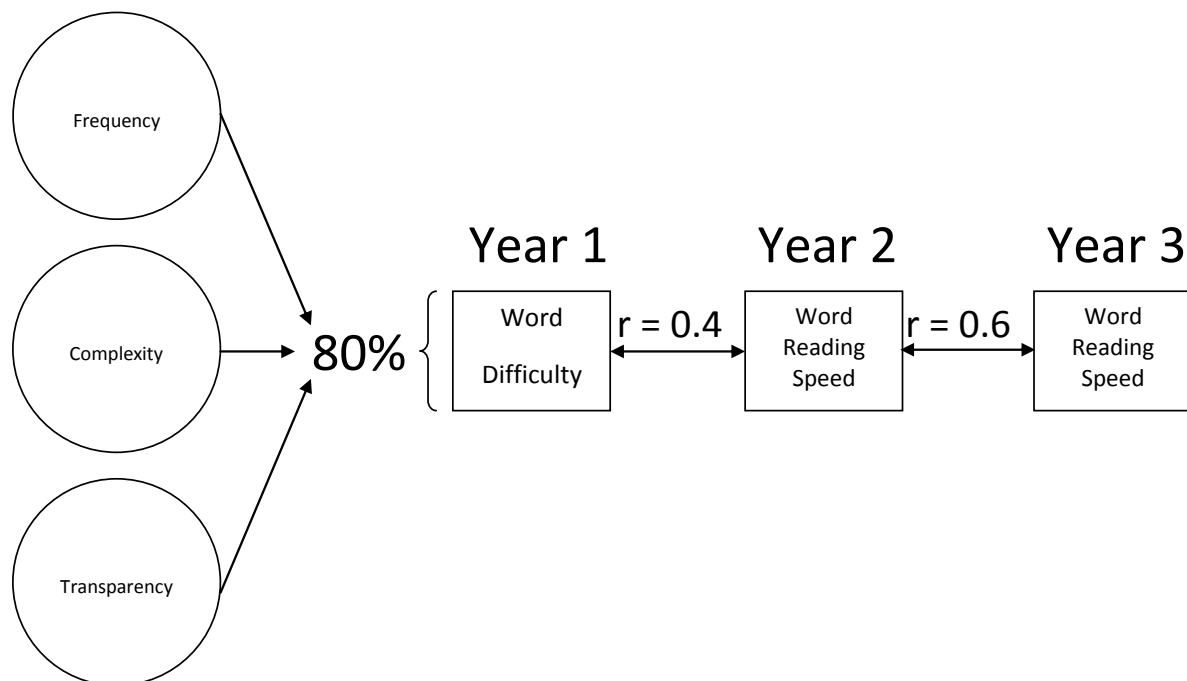
The Institute for Learning (IfL) at Hull University has had a long and successful association with Parkstone Primary School. In the early 1990s the Institute was approached by the headmaster of the school, Kent Dewar, with the suggestion that our computer expertise could be used to support children who were having reading difficulties. The results of that research were published in the British Journal of Educational Technology (Spencer, 1996). The outcome of this research was the proposal that the English language was the main cause of pupil difficulties in reading. With the introduction of Synthetic Phonics to the school, through its association with the Institute for Learning at the University, we began a study of spelling and reading in the school. We found that the main problem for children was the inconsistency of the English written language, and we identified three causal factors. Two research papers have recently been published in the British Journal of Psychology which summarise the data collected at Parkstone School (Spencer, 2007, in press). Our most recent study, conducted during this academic year, has demonstrated that the factors that have been identified in spelling and reading accuracy also play a major role in the reading speed of older children.

The Institute for Learning is most grateful for the help and cooperation of the school governors, teachers, pupils and parents who have enabled this data to be collected. This brief report has been prepared to provide feedback to colleagues, with the intention of providing clear practical pedagogical outcomes of the research.

The latest research shows that the best indicator of the speed with which words are read is the *word difficulty* index that we calculated from the performance of Year 1 pupils over a five-year period. Our measure of *word difficulty* is based on the number of Y1 children who were able to read a particular word. We use the most common 150 words in the English language in our studies, and found that some words, the easy words, could be read by all of the 105 children in the group. The more difficult words could only be read by small numbers of Y1 children. We demonstrated that the three main factors that control the difficulty of the word for Y1 children are: the frequency of the word (even though these were very frequent words); the number of sounds (phonemes) with double letters, in other words how complex the words are; and how unusual some of the letters are, for example, in the word *though* the second sound has an unusual spelling (*ough*). Teachers, parents and children have long known that English spelling makes reading and spelling difficult for young children, and for

some adults, in the English speaking world (it has been found in other English speaking countries such as Canada, USA, New Zealand and Australia). The Parkstone research is the first study to accurately pinpoint the difficulties inherent in many common English words, and provides a firm foundation for the pedagogical practice of Synthetic Phonics. So, Parkstone School is not only the first English school to use the systematic Synthetic Phonics approach, but also has provided the research data which supports this practice.

The latest study, using new techniques for measuring single word reading speed, has demonstrated the need to utilise, and if possible improve, Synthetic Phonics approaches to early reading. The key indicator for early, successful reading was found to be a pupils' knowledge of the 40 sound-pictures used in the teaching of Synthetic Phonics (i.e. the single letters and digraphs that represent the 40+ sounds in English). The secure knowledge of these sound-pictures determines the number of words that pupils can read, and this in turn is reflected in later word reading speeds in Years 2 and 3. Word reading speeds are related to reading comprehension. Below is a simple diagram illustrating the main influences on word reading speed.



Overall, we have found that in the early stages of reading acquisition the three main factors account for 80% of the variability in single word reading. In other words, by looking at the values for the 3 factors for a given word, we can predict how many children in a class can read the word, with an accuracy of 80% (this is unusually high for a psychological study, although we would still like to be 100% accurate). This is then reflected over the ensuing years in the speed with which the word is

read. So, word difficulty in Y1 has a correlation of 0.4 with reading speed in Y2, and Y2 reading speed has a correlation of 0.6 with Y3 reading speed.

The model shown in the diagram has been concerned with word difficulty. This is an unusual approach to the study of early reading acquisition. Most research has concentrated on the children rather than the words, but we believe that this is the wrong approach because for most languages the majority of children have little difficulty when they start to read. This is because most languages are very regular when they are written down and children find it very easy to learn the connection between letters and sounds. However, English is very irregular and this is what causes problems for children when they begin to read. We know from our research, and from research in other languages, that it is deficiencies in the written language, rather than deficiencies in the children, that cause most of the problems associated with literary acquisition in our schools. Our research has focused on word difficulty because we believe that if we can understand precisely what makes a word difficult to read, then we can develop strategies to help children overcome the difficulties associated with particular words. For example, the complexity factor simply means the number of letters in a word compared to the number of sounds, and it shows that sounds that require two letters, for example *ch* or *sh*, are more difficult for children in the early stages of reading than sounds that only require one letter. A simple solution to help children overcome this difficulty is to identify double letters that have one sound by putting a circle around them. We have tried this out at Parkstone (Spencer, 2006) and find the children have less difficulty once they have learned that letters inside a circle make one sound rather than two.

Dealing with irregular letters, which are also often complex, is more difficult. However, one way of dealing with irregularity is to provide texts that do not contain too many irregular words. This is not as easy as it sounds to achieve, and few reading schemes have managed to incorporate this aspect into their texts.

Frequency is an interesting predictor of word difficulty for the simple fact that children have more practice at learning how to pronounce frequent words, even if they are complex and irregular. For most languages, frequency plays a very minor role in reading acquisition, but it is the major factor in early reading for English-speaking children. However, because frequency is such an important factor it is essential that children have frequent contact with words and this is achieved by making reading easy and enjoyable: the more the child reads, the higher the frequency of contact with words, and the greater the acquisition of literacy skills.

Children obviously have different rates of learning, but it is essential, according to our research, that all children in the early stages of literacy acquisition have a thorough knowledge of the 40 sound pictures that are taught within the synthetic phonics programme. Turning to our data on the individual children, it was apparent that high reading scores are associated with more secure knowledge of the 40 sound pictures.

In conclusion, I hope that this report has demonstrated that the research that has been conducted at Parkstone School is leading to a deeper understanding of the processes associated with early literacy acquisition. The research on word difficulty and reading speeds has confirmed the benefits of the synthetic phonics approach to early literacy acquisition. This has demonstrated that the more rigorous the application of this method, the more powerful the benefits, which will include a wider reading vocabulary, together with faster reading speeds, and this in turn will lead to increasing rates of comprehension of texts as demanded by the Y6 national tests.

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