

# Sight Word and Phonics Training in Children with Dyslexia

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Sight word training led to significant gains in sight word reading measures, which were larger than gains made from phonics training; phonics training led to statistically significant gains in phonics reading measures, which were larger than gains made from sight word training; and both types of training led to significant gains in general reading that were similar in size. Training phonics before sight words had a slight advantage over the reverse order.

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The aims of this study were to a) compare sight word training and phonics training in children with dyslexia and b) determine if different orders of sight word and phonics training have different effects on the reading skills of children with dyslexia. One group of children (n = 36)

participated in 8 weeks of phonics training and then 8 weeks of sight word training, one group experienced the reverse ( $n = 36$ ) and one group took part in phonics and sight word training simultaneously for two 8-week periods ( $n = 32$ ). Sight word training led to significant gains in sight word reading measures, which were larger than gains made from phonics training; phonics training led to statistically significant gains in phonics reading measures, which were larger than gains made from sight word training; and both types of training led to significant gains in general reading that were similar in size. Training phonics before sight words had a slight advantage over the reverse order.

- Around 5% of children find it unusually difficult to learn to read even though they have had normal reading instruction, they have normal intelligence and they have no known neurological or psychological problems.
- To date, most treatment trials performed with children with dyslexia have looked at the effects of 'phonics' reading programmes.
- These programmes teach children to learn to read using the grapheme-phoneme correspondence (GPC) rules (i.e. 'letter-sound rules').
- In children with poor reading, phonics training had a moderate and significant effect on reading accuracy for 'nonwords' and 'regular words', and a small but significant effect on reading mixed words.
- When children first see the word CAT, they have to a) identify the letters, b) translate each grapheme into a speech sound and c) blend these phonemes together into a word that is spoken aloud.
- Once a word has been read a number of times via the phonics route, a memory is formed of the whole word.
- This memory activates the meaning of that word, the spoken representation of that word and the spoken output of that word.
- Together, these components form the 'sight word' or

'lexical' reading route of the dual route model of reading.

- Phonics reading plays an important role in the development of sight word reading.



## **The present study**

This study had two aims: a) to compare sight word training and phonics training in children with dyslexia and b) to determine if different orders of sight word training and phonics training have different effects on the reading skills of children with dyslexia.

### *The hypotheses*

1. *Sight word training will lead to statistically significant gains in sight word reading measures, which will be larger than gains made from phonics training.*
2. *Phonics training will lead to statistically significant gains in phonics reading measures, which will be larger than gains made from sight word training.*
3. *Phonics training and sight word training will have similar-sized significant effects on measures of reading that will affect both phonics and sight word reading.*

## **Study design**

In Test 1, children aged between 7 and 12 years old completed the screening and outcome measures. After 8 weeks of no training, they returned to perform the outcome measures. The phonics + sight word group (n=36) then did 8 weeks of phonics training (and then Test 3) followed by 8 weeks of sight word training (and then Test 4). The sight word + phonics group

(n=36) experienced the same except the order of training was reversed. The mixed + mixed group (n=32) participated in phonics and sight word training on alternate days for 8 weeks (and then Test 3) and then the same again for another 8 weeks (and then Test 4).

## **Interventions**

### *Sight word training*

- Children were asked to take part in five sight word training sessions per week for eight weeks.
- Each training session, which was designed to take 30 min, used one of 30 lists of 24 irregular words that increased in difficulty both between and within lists.
- The sight word training focused on reading accuracy rather than fluency.
- The training was done at home with the support of both a parent and a computer.

### *Phonics training*

- Children and parents were instructed to perform the phonics training at home for 30 min per day, 5 days per week, for 8 weeks.
- All training was done on a computer.
- Training focused on accuracy rather than fluency.

### *Mixed training*

- The mixed training was the same as the phonics and sight word training except that each type of training was performed on alternate days.



## Findings

### *Trained irregular word accuracy*

- Eight weeks of phonics, sight word and mixed training had very large and significant training effects on trained irregular word accuracy.
- The two groups that participated in sight word training saw larger gains than the group that did phonics training.
- Sixteen weeks of phonics and sight word training had a very large and significant training effect on trained irregular word accuracy.
- The phonics + sight word group made smaller gains in their first eight weeks of training than the two groups that did sight word training but then made much larger gains than these groups when they did sight word training in the last eight weeks.

### *Untrained irregular word accuracy*

- Eight weeks of phonics, sight word training and mixed training had very large and significant training effects on untrained irregular word reading accuracy.
- Sixteen weeks of phonics, sight word and mixed training had significant and very large training effects on untrained irregular word accuracy.
- The group that performed sight word training before phonics training made smaller gains than the phonics + sight word group and mixed + mixed group.
- Untrained irregular words respond similarly to eight weeks of phonics and sight word training, but benefit more when phonics precedes sight words than vice versa.

### *Nonword reading accuracy*

- Eight weeks of phonics, sight word and mixed training had moderate to large training effects on nonword reading accuracy.

- Sixteen weeks of phonics and sight word training had a significant and moderate to large training effect in each training group.

### *Nonword reading fluency*

- Eight weeks of phonics, sight word and mixed training had moderate to large training effects on nonword reading fluency in the phonics + sight word group and mixed + mixed group.
- Despite the absence of a true treatment effect in the sight word + phonics group, there were no significant differences between the gains made by the children who did phonics training, sight word training or mixed training.
- Sixteen weeks of phonics and sight word training had a significant and moderate to large training effect on nonword reading fluency in the phonics + sight word group and mixed + mixed group but not in the sight word + phonics group.
- However, the between group's ANCOVA revealed no difference between the groups after 16 weeks of training, suggesting that nonword reading fluency responds similarly to phonics training, sight word training and mixed training regardless of the order of the training.

### *Word reading fluency*

- Eight weeks of phonics, sight word and mixed training had a large and significant training effect on word reading fluency.
- Sixteen weeks of phonics and sight word training had a large and significant training effect on word reading fluency.
- Word reading fluency may respond slightly more to phonics training than sight word training.

### *Reading comprehension*

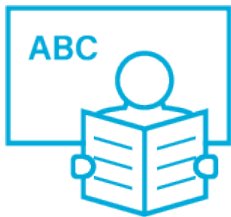
- Eight weeks of phonics, sight word and mixed training had large and significant effects on reading comprehension.
- Sixteen weeks of phonics and sight word training had a large and significant training effect on reading comprehension.
- Reading comprehension responds similarly to phonics training, sight word training and mixed training regardless of the order of the training.

## Summary

- Sight word training had a significant effect on trained and untrained irregular word reading, and in the case of trained irregular words, this effect was larger than the effect of phonics training.
- Phonics training had a significant effect on nonword reading accuracy and nonword reading fluency.
- These results suggest that it is important to explicitly teach phonics to children with dyslexia because these children appear to learn GPC rules more readily from phonics training than from exposure to sight words.
- Both sight word training and phonics training had significant effects on word reading fluency and reading comprehension.
- An unpredicted finding of this study was that sight word training, even when restricted to irregular words, can produce some benefits to reading via the phonics reading route, suggesting that phonics rules can be deduced implicitly from exposure to sight words to some extent.
- Training order had a significant effect on the untrained irregular word accuracy test.
- The group that experienced phonics training before sight word training saw significantly greater gains than the group who did sight word training and then phonics training.
- The superior effect of training phonics then sight words

on untrained irregular words provides some support for the idea that phonics skills help children read unfamiliar words, even when those words are irregular.

- However, there appears to be no general disadvantage (or advantage) for training phonics and sight word reading simultaneously in children with dyslexia.



## **Implications**

- These results, together with previous studies, suggest that relatively pure phonics training delivered via computers for up to 2 hr per week for less than 3 months has moderate to large effects on various reading skills, which reflect small yet reliable gains in children with dyslexia.
- The outcomes of this study support the idea that many children with dyslexia need more than just phonics training.
- Sight word training is particularly important for irregular words.
- Training children to read irregular words will not impair their ability to read via the letter-sound rules.