

Results of Move4words trials in the UK classroom. Paper 6 – Reading Speed.

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Abstract:

Reading Speed of 360 children and students from Years 3, 4, 5, 6, and 7 was assessed before and after the 12 week Move4words programme. Results show that reading speed increased significantly after the Move4words programme for all five year groups. Whole class improvements average to 12 % increase in reading speed, while slow readers improved the most with an average 20 % increase in speed. These improvements are statistically significant.

The project:

The author developed a reading speed test, which uses 18 simple words familiar to most children, such as cat, dog, red etc, repeated 10 or 11 times and randomly distributed in an 8 by 24 grid. The complete test is reproduced at the end of this paper. The child or student reads as many words as possible in one minute, and the number of words which were read correctly is noted. The aim of the project was to determine whether reading speed increased after the Move4words programme. Any such improvement might reflect an improvement in reading ability and/or an increase in brain processing speed.

Results:

Baseline assessments: Reading speed was assessed in late April/ early May for 539 children from years 3, 4, 5, 6, and 7 (aged between 8 ½ and 12 ½). Primary school assessments were carried out by the regular classroom teacher with whole class groups containing the full range of ability, one of the three Secondary schools which participated chose to assess Year 7 students who were performing below the average.

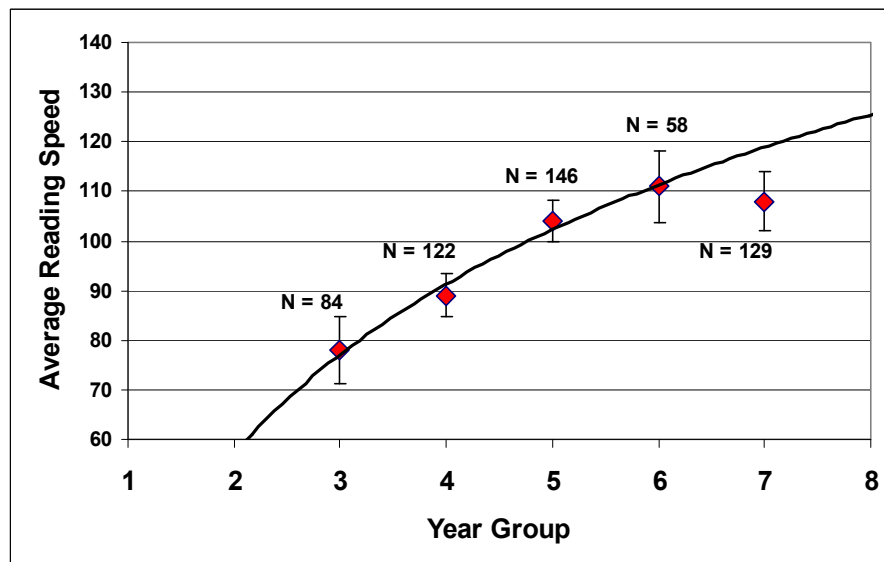


Figure 6.1: Reading speed in simple words per minute for 539 children from five year groups before starting the Move4words programme. N indicates the number of children/students in each year group. The Year 7 group contains more pupils who were performing below average.

Figure 6.1 shows that reading speed determined by this test increases systematically with age for all the four Primary year groups assessed (regression coefficient of 0.98 with a logarithmic fit to the data). This gives us confidence that the test properly assesses a real ability which develops consistently as the child develops. The Year 7 data fall below the Primary school best fit line because one Secondary school chose to focus their trial of Move4words on a group of students who were performing below the average.

Reading speed changes after Move4words: Participating schools provided us with reading speed data from immediately before and just after the end of the Move4word programme for 360 children/students. One large body of data from one school (all children from Years 3, 4, 5, and 6) was unfortunately lost in the post, and a similarly complete body of data from another school had to be discarded because inconsistencies in their anonymous student numbering system meant that children in the pre and post groups could not be matched up. This is why we have fewer data in this section than the 539 who contributed to the graph in Figure 6.1.

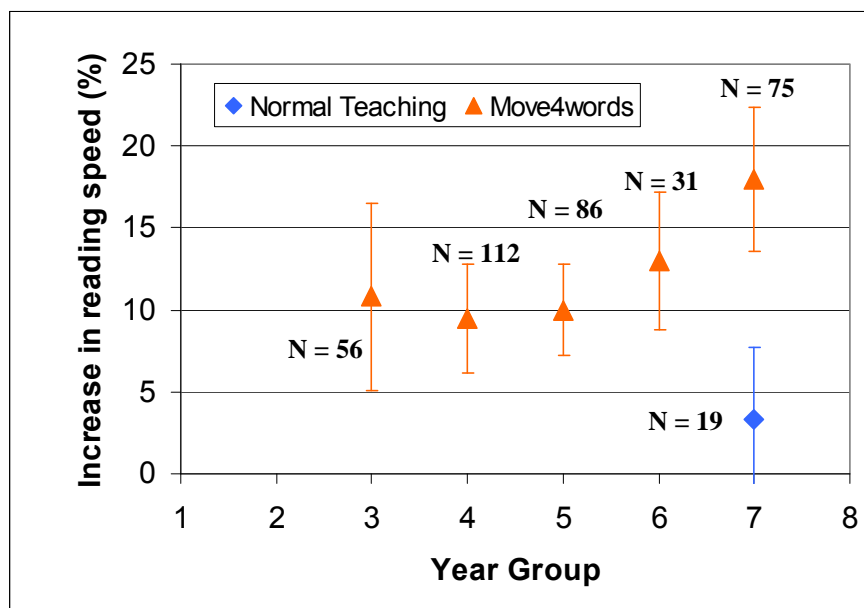


Figure 6.2: Whole class group average percentage change in reading speed after the 12 week Move4words programme for 360 children from five year groups (Orange symbols). Vertical bars indicate 95% confidence limits on group average values. Blue symbol represents change in reading speed over same time period in a small group of Year 7 students who were not on the Move4words programme. N indicates the number of children in each group.

We calculated the change in reading speed in words per minute (Δ Reading speed) between each child's test data from before and after Move4words, and then determined the percentage change ($100 \times \Delta$ Reading speed / initial reading speed).

Figure 6.2 shows that reading speed for all five year groups increased significantly by an average of 12% after the Move4words programme compared to their reading speed immediately before the programme commenced. One school trialled the reading speed test with a small group of Year 7 students who did not do Move4words (indicated in blue in Figure 6.2) as well as a similar group who did Move4words. Reading speed did NOT increase significantly in the regular teaching group.

We were interested in how reading speed changed for those who were initially slow or fast readers. To address this question, we split the data from each year group up into two parts, one consisting of those whose initial reading speed was above the average value shown in Figure 6.1, the other group consisting of those whose initial reading speed was at or below the initial average value.

Figure 6.3 shows how these initially slow and fast readers responded to the Move4words programme.

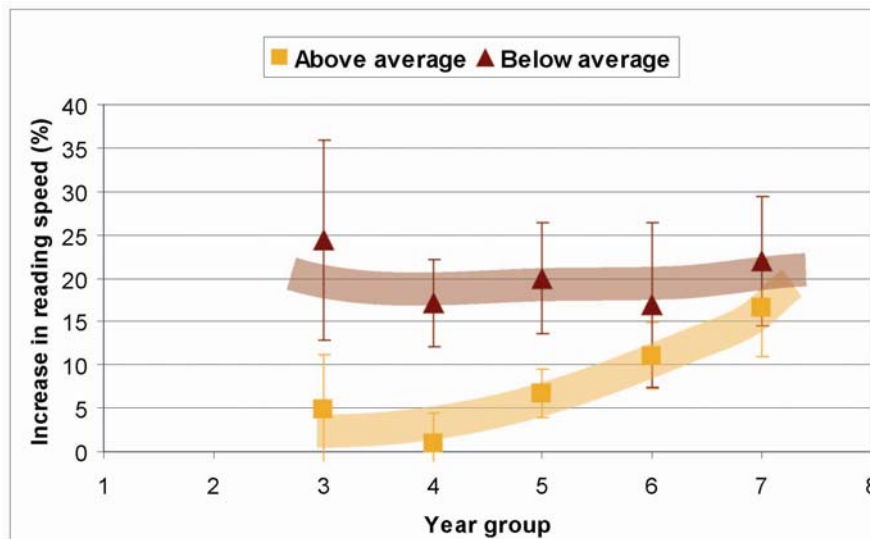


Figure 6.3: Percentage change in reading speed for children from five year groups with initial reading speed above or below the average values from Figure 6.1. Values are calculated from reading speed tests taken before and after the 12 week Move4words programme. Vertical bars indicate 95% confidence limits on group average values.

Figure 6.3 shows that reading speed increased by an average of 20% for initially slow readers, and that this level of improvement is consistent across all five year groups.

Fascinatingly, the change in reading speed appears to be age dependent for initially faster readers, with only a few percent increase in speed for year 3 and 4, and systematically increasing benefits for older children. Those in Year 7 experienced almost as much improvement in reading speed as did the initially slower readers.

This may indicate that some of the children in Year 3 and 4 have already reached their full potential in reading speed, so no further increase can be brought about. Maybe, as our children mature, our educational system is not stretching them to their full capacity, so that there is more room for improvement for older children. More research will be needed to fully understand this issue.

Conclusions:

The results of trials of the Move4words programme in the classroom demonstrate that the Move4words programme has a significant positive impact on reading speed for children from Years 3, 4, 5, 6 and 7 in comparison to normal teaching and literacy support.

Reading speed increases consistently by about 20% for children/students with initially slow reading speed for all year groups studied. Smaller improvements of an average of 8% are brought about for children/students with initially faster reading, with larger improvements being observed for older children.

Again, the evidence strongly suggests that Move4words has a positive impact on literacy, and that its contribution is greater for those with more literacy challenges, and so helps to narrow the gap in achievement.

MOVE4WORDS reading speed test**Student number:****Student DOB:****Year group:****Date of test:**Read from left to right **ALONG** the lines.How many words can you read in **one minute**?

bus	her	pig	if	the	dog	if	red	8
run	come	bus	cat	red	baby	bag	cat	16
and	him	bag	sit	bed	him	baby	come	24
me	cot	and	red	bag	run	sit	me	32
if	bed	it	baby	dog	sit	run	bus	40
run	come	the	her	if	cat	you	cot	48
him	bus	cot	you	bed	come	cot	you	56
red	you	cat	bed	him	the	run	her	64
sit	me	baby	come	pig	her	bus	dog	72
the	it	red	him	cot	and	red	and	80
him	if	cat	you	bag	cot	and	sit	88
and	her	it	dog	the	it	bed	her	96
me	bag	sit	baby	run	pig	come	the	104
dog	sit	cot	and	cat	baby	bus	cot	112
me	pig	if	red	it	bag	you	cat	120
the	run	bag	cat	you	me	me	baby	128
bus	dog	baby	come	bed	you	it	red	136
her	pig	sit	me	it	bus	if	cat	144
dog	bed	run	bus	and	if	her	it	152
pig	come	you	cot	her	red	bag	sit	160
bag	the	cot	you	bed	run	sit	cot	168
baby	if	run	her	cat	you	pig	if	176
it	him	bus	dog	pig	cat	run	bag	184
me	sit	red	and	come	the	dog	baby	192