

The Limerick Parent Toe-by-toe Intervention for Struggling Readers: Findings from A Research Project

Parent delivered intervention offers potential as a means for directly improving the reading skills of struggling readers. The focus of this study was to examine the impact of a reading intervention when used by parents within the home setting. Specifically, this study evaluated the effects of the Toe-by-Toe Reading Programme when implemented by parents of struggling readers. Findings showed that students participating in the Toe-by-Toe programme significantly improved on three different measures of reading word attack, word reading and reading fluency. There was less impressive growth on the reading comprehension and spelling subtests. The results of these studies are consistent with the empirical literature on the potential efficacy of parents as tutors of their children.

Keywords: Toe-by-toe, reading intervention, parent, struggling readers

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INTRODUCTION

In September 2017, all the Primary schools in Limerick (City and County) were contacted with a view to identifying children who were (a) struggling to acquire reading skills and (b) whose parents would be interested in participating in a parent-child reading intervention. The schools represented a diverse range of communities at both ends of the continuum of social and economic disadvantage (DEIS and Non-DEIS) in both rural and urban contexts. In the current study the aim is to measure how effective the Toe-by-toe (TBT) programme could be if delivered by parents rather than teachers. The material cost of the Toe-by-toe programme itself, is very low (40-60 euro). However, due its individualised delivery, it is very costly in terms of teacher time (20 minutes per day for extended periods of between 6 and

9 months typically). If motivated parents could be trained effectively on a research validated programme and could administer it with fidelity, there would be obvious benefits for struggling readers.

LITERATURE REVIEW

Toe-by-toe is a highly structured phonics programme which has historically been used in schools within the context of special education provision for children with specific reading difficulties (Nugent 2010) The programme is a synthetic phonics approach which predicated on teaching learners the relationship between letters and sounds and how to use this process to decode and read words (Adams 1990) The Toe-by-Toe programme contains components common to all explicit and systematic phonic approaches including, a curriculum with a specified, sequential set of phonics elements; and instruction that is direct, precise, and unambiguous (Stahl et al. 1998). The reading of non-words is a particular feature of this programme, and there is also considerable emphasis on recording progress. It is an individualised approach, and the recommended practice is for approximately 20 minutes of instruction, daily.

In a previous study by the current authors the Toe-by-toe programme was combined with guided oral reading, both undertaken by a Special Education Teacher (O'Rourke, Olshtroon, & O'Halloran, 2016). In addition to receiving the Toe-by-toe programme, the pupils benefited from a targeted intervention of guided oral reading, at the 'just-right level', using the Rigby PM Readers series. This allowed struggling readers to read books with high levels of success and just the right amount of challenge. The pupils had previously been identified by their individual school as having reading difficulties and were receiving either individual or small group reading intervention. All participants received one to one daily Toe-by-toe teaching (15-20 minutes) and oral reading practice (15-20 minutes) over the duration of five months. A high portion of the participating pupils in the 2016 study made impressive gains in word reading and reading fluency.

Parent-Delivered Intervention

The focus of this study was to evaluate the Toe-by-toe programme in the context of home-based use by parents. There have been several studies which have confirmed that if parent tutors are provided with appropriate training and supervision, they can successfully improve their children's academic skills (Daly Iii and Kupzyk 2012). A meta-analysis of studies measuring parent-child reading activities and found that they can positively influence children's reading skills (Sénéchal and

Young 2008). This finding is further strengthened when parents are provided with tailored training to implement reading interventions rather than the parents just reading to children or listening to their children read. Research which examined the effects of summer parent tutoring on three children with specific learning difficulties using evidence-based reading interventions found that parents were able to implement the interventions effectively when they were provided with appropriate support (Gortmaker et al. 2007). Finally, (Zhou et al. 2019) reported that parent led reading interventions can lead to encouraging pupil outcomes even when the pupil had failed with previous school intervention.

The Toe-by-toe programme was selected as a suitable programme because it has a straightforward lay out and research suggests that parent delivered reading interventions work best when they are structured and easy to follow (Kupzyk et al. 2011).

METHODOLOGY

In the current study a parent/ caregiver of each identified struggling reader was invited to a local Toe-by-toe training. The training was a tailored hands-on workshop which provided guidance on how to implement the programme. The Local Education Centre invited a trainer from the Toe-by-Toe publisher to deliver the workshop. This research was underpinned by the informed consent process which included all pupils being given the opportunity to assent to involvement in the study through participant and parental information sheets and consent/assent forms.

At the introduction to the training parents were given verbal assurance that the research element was voluntary. Indeed there was a small group of children, whose parents attended the training and who received the Toe-by toe intervention, but did not take part in the study.

The participating pupils were all selected as having significantly below average reading skills (see table 1). An email was sent to every Mainstream Primary School in Limerick for the attention of the Special Education Teacher (SET) Coordinator to inform them of the proposed study and requesting suitable participants. The SET Coordinator was asked to consider only pupils who were receiving additional teaching support to help target reading difficulties. There were no other exclusionary criteria highlighted by the researchers such as general cognitive ability or English as an Additional Learners. The SET Coordinator

contacted parents/guardians of suitable pupils directly to see if they wished to participate in the study and explained that it would be a parent lead home-based intervention. The participating children (n=27) were initially pretested using the Woodcock-Johnson III Tests of Achievement (WJ III ACH) (Woodcock, McGrew, & Mather, 2001; 2007). The following subtests were used:

- *Letter-word identification*
- *Passage comprehension*
- *Reading fluency*
- *Word attack*
- *Spelling of sounds*

Table 1: The Average Pre-test Standard Scores/Percentile Scores for Each of the WJ-III Subtests

<i>The average pre-test standard scores/percentile scores for each of the WJ-III subtests.</i>	<i>Average pre-test standard scores average</i>	<i>Average percentile equivalent</i>
<i>Letter-word identification</i>	81	10th
<i>Passage comprehension</i>	80	9th
<i>Reading fluency</i>	73	3rd
<i>Word attack</i>	69	2nd
<i>Spelling of Sounds</i>	82	12th

The pupils were also individually assessed using the British Picture Vocabulary Scale, 3rd Edition (BPVS-3) (see table 2). This test measures a child’s receptive vocabulary and does not require the child to read.

Table 2. The Average Pre-test Standard Scores/Percentile Scores for the BPVS-3

	<i>Average pre-test standard scores average</i>	<i>Average percentile equivalent</i>
<i>British Picture Vocabulary Scale: Third Edition (BPVS3)</i>	81	10th

RESULTS

Participants (N=27) were pre-tested using subtests from the Woodcock Johnson III Brief Battery-C. Subtests examined participants' levels of word identification, passage comprehension (reading comprehension), reading fluency, word attack skills and spelling of sounds. After four and a half months of intervention, participants were post-tested using the same subtests. Pre-intervention and post-intervention data were collected after approximately 4.5 months. Ideally the period between testing should have been at least 6 months to ensure no practice test effects. Word reading accuracy improved by 16.8 months (ratio gain = 3.35), reading fluency by 14.3 months (ratio gain = 2.8), passage comprehension by 10.7 months (ratio gain = 2.1), word attack by 12.4 months (ratio gain = 2.8) and spelling skills by less than 4 months (ratio gain = 0.8). These gains are all the more impressive because the participants were all children who struggled significantly to acquire reading skills.

Letter Word Identification

After a period of approximately 4.5 months, participants' accuracy in word identification had improved on average, by 16.2 months. This represents a **substantial ratio gain** of 3.61, and an average gain of 8.77 standard scores.

Reading Fluency

Post-intervention test results demonstrated that on average, participants' reading fluency ages had improved by 10.8 months. This represented a ratio gain of 2.4 and an increase of 7.72 standard scores.

Passage Comprehension

Participants' overall average passage comprehension attainment scores demonstrated relatively modest improvement post-intervention. The average passage comprehension scores increased by 4.05 months. This indicated a ratio gain of 0.9 which is an average of 2.63 standard score points.

Word Attack

Upon examination of pre- versus post-intervention attainment scores, gains in word attack skills were generally very positive. On average, an improvement of just less than a full year's growth (11.48 months) was recorded post-intervention, representing a ratio gain of 2.55 on the word attack subtest. On average, participating pupils showed an increase of 7.9 standard scores.

Spelling of Sounds

Participants indicated an average increase of 6.98 months in the accuracy of their spelling of sounds during their post-intervention assessment. As a result, a ratio gain of approximately 1.55 over the 4.5-month period was recorded.

DISCUSSION

The results have important implications because they present clear evidence that if the Toe-by-toe programme is delivered by trained parents, it can produce significant gains for struggling readers. The greatest gains achieved were in word reading, reading fluency and word attack skills. While the reading fluency improvement is good, it is less impressive than that found in the previous study (O'Rourke et al., 2016) which produced an average gain of 14.29 standard scores (compared to 10.8 in the current study). It is noteworthy that this intervention did not include an oral guided reading component. Perhaps this may explain this shortfall and underline the key message that a systematic phonics programme should always be coupled with ample reading practice for balanced reading growth.

The least impressive gain was in reading comprehension (just over 4 months progress in 4.5 months intervention). However, this particular cohort of pupils had generally low vocabulary levels in addition to poor word identification/decoding skills. Multiple studies have highlighted a strong relationship between vocabulary knowledge and reading comprehension, finding that the size of a person's vocabulary is one of the strongest predictors of reading comprehension (Nation et al. 2010). For example, (Clarke et al. 2010) reported on a study that showed that despite being matched to typical readers on decoding, phonological skills, and nonverbal ability, children with reading comprehension difficulties performed poorer on vocabulary compared with typical readers. Similarly, the findings from (Snowling et al. 2016) found deficits in vocabulary as a significant underlying cause of pupils' reading comprehension difficulties. Although difficulty in decoding the words on a page is the most common cause of reading comprehension problems, between 10 and 15% of children experience poor comprehension despite maintaining normal levels of reading accuracy and fluency (Adams et al. 1992)

This suggests the need to include components designed to build other literacy-based skills fundamental for reading comprehension success e.g. vocabulary, background knowledge, explicit comprehension strategies. Developing and

implementing an intervention that incorporates these elements is likely to be much more successful at remediating children's reading comprehension skills (Gredler 2002).

FUTURE DIRECTIONS

Our findings show that the Toe-by-toe programme delivered by trained parents has the potential to be a highly effective intervention, particularly for word decoding and word identification skill deficits. These findings have practical implications for parents who are willing and able to intervene themselves for their struggling children. Therefore, educators aiming to increase home-school collaboration and/or intervention support for struggling readers should strongly consider providing training and ongoing support with the Toe-by-Toe programme.

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