

The impact of Reading Recovery ten years after intervention:

A report for the KPMG Foundation

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1 Executive summary

1.1 Background

Every Child a Reader began as a three year (2005-2008), £10 million pilot project, later rolled out nationally. It aimed to show that the literacy difficulties that blight the lives of many children (particularly disadvantaged children) could be tackled. The project, led by the KPMG Foundation, was supported and funded through a unique collaboration between charitable trusts, the business sector and government.

Reading Recovery formed part of the *Every Child a Reader* strategy. Reading Recovery is an intensive one-to-one reading programme aimed at children in their second year of schooling who have made little or no progress in literacy even after high quality classroom instruction. Its target group within *Every Child a Reader* was children in the bottom 5-10 % of the national attainment range.

The immediate effects of the programme were substantial¹. In the light of the ‘wash-out’ known to affect many literacy intervention programmes, in which initial promising results soon fade, the KPMG Foundation commissioned a long-term follow up study to examine whether these effects would be sustained².

1.2 Methods

The study is a ten-year follow up of 239 children involved in the original 2006 evaluation³. In this earlier study, children who received Reading Recovery were compared with children who attended similar schools where Reading Recovery was not offered (the comparison group).

The children were traced at the end of school Years 9 and 11 (ages 14 and 16) through a national database of pupils in all government-funded schools in England which records, amongst other things, information on special educational needs and national qualifications achieved.

At age 16, 222 of the original 239 children could be traced. Since the follow-up was conducted using the National Pupil Database it is likely that many of these untraced children had moved out of England. In both the Reading Recovery and comparison group the children who were untraced did not differ significantly from those traced, either on demographic factors or literacy levels.

The children in the study were selected from economically disadvantaged areas, with just over half eligible for Free School Meals. The children who received Reading Recovery were similar to the comparison group in initial literacy levels, age, gender, the percentage with English as an Additional Language and the percentage judged by their school to have special educational needs.

The groups were not well matched on Free School Meals, which was accounted for by using multiple regression analysis, which enables researchers to take account statistically of any differences between the intervention and comparison group before the intervention. As a further check, comparing like with like, separate analyses were undertaken for children eligible for Free School Meals, comparing Reading Recovery and comparison group, and a similar analysis for children not eligible for Free School Meals.

¹ Burroughs-Lange, S. and Douetil, J. (2007) Literacy Progress of Young Children from Poor Urban Settings: A Reading Recovery Comparison Study. *Literacy Teaching and Learning* Volume 12, Number 1; Tanner, E. et al (2011) Evaluation Of Every Child a Reader (ECaR) Research Report DFE-RR114. London: DfE.

² The results of this follow-up study are also reported in *Reading remediation at age six: long term effects on qualifications and support at age 16*. Hurry, Jane & Fridkin, Lisa (2018) Paper submitted for publication

³ Burroughs-Lange, S. and Douetil, J. Op Cit.

1.3 Results

Follow-up on academic progress in school Year 11 (age 16 years)

- At follow-up, the Reading Recovery group had **significantly higher overall GCSE point scores** than the comparison group.
- Ten years after the original intervention, the magnitude of **the effect of the extra help** was greater than is generally seen immediately after the majority of comparable educational interventions evaluated in research studies⁴ (**an 'effect size' of 0.49 overall**, 0.56 for children not eligible for Free School Meals and 0.37 for just those children eligible for Free School Meals).
- **49% of the Reading Recovery group achieved the nationally expected level of qualification for educational progression** (5 or more GCSEs at the former A* to C grades, including English and Maths, equivalent to grades 8 to 4 in the current system), compared to a national average of 54% for all pupils in the same year. Only 23% of the comparison group reached this level.
- **2% of the Reading Recovery group achieved no GCSE passes**, compared to 7% of the comparison group.

Thus these Reading Recovery pupils in the bottom 5-10% of readers at age six were performing only 5% below the national average at age 16 and were twice as likely to reach an important qualification threshold as comparison group pupils.

Special Educational Needs and Disabilities (SEND) status

At baseline (age 6), of the 222 children for whom data was available at age 16, 8% had been identified by their schools as having some level of special educational needs (SEN). There were no significant differences between the Reading Recovery and the comparison group.

When children were at the end of school Year 9 (age 14), their SEN status was harvested from the National Pupil Database. At the time, English schools were required to adhere to a SEN code of practice (involving roughly 20% of children overall), as follows: a status of School Action was recorded by schools when a child was not making progress and action was needed to meet learning or behaviour difficulties; School Action Plus was used where a child had not made adequate progress under School Action and external advice was being sought; finally, for the most persistent and serious problems the child would be assessed by experts and receive a Statement of SEN which is a formal document detailing a child's learning difficulties and the help they will be given (roughly 2% of children in English schools).

When the children were aged 14 (the end of school Year 9):

- An overall 46% of children had been identified as having SEN.
- There were **significantly fewer Reading Recovery pupils with a SEN status (35%)** than comparison group pupils (52%).
- 10% of the comparison group had a Statement; **none of the Reading Recovery children required this level of provision.**

Data was again harvested from the National Pupil Database when children were at the end of school Year 11 (age 16) at which time the practices and legislation had changed somewhat: School Action and School Action Plus were grouped together and a Statement of Special Educational Needs and Disabilities (SEND) and the newly introduced Education Health and Care Plans (EHCP, equivalent to a Statement of SEND) were grouped together.

⁴ Cheung, A. and Slavin, R. (2016) How Methodological Features Affect Effect Sizes in Education *Educational Researcher* Volume: 45 issue: 5, page(s): 283-292

At this point there were still significantly fewer Reading Recovery pupils with a Statement of SEND or EHCP than comparison group pupils but no other significant differences.

1.4 Comparable studies

There has been little previous research on the long-term benefits of early literacy intervention.

A meta-analysis of studies of the long-term effects of 71 reading interventions found that the average time from immediate post-test to follow-up was only 11 months⁵. There were small but useful immediate post-test effects (an effect size of 0.37) that decreased at follow-up (effect size 0.22).

One study comparable to the present research reported long-term impact on children's word reading (an effect size of 0.53) a decade after children had received an intensive and reasonably broad-based reading intervention for early reading difficulties. There was no effect on reading comprehension, however. The intensity and duration of the intervention was not dissimilar to Reading Recovery.

1.5 Conclusions and implications

The positive effect of Reading Recovery on qualifications at age 16 is marked in this study and suggests a sustained intervention effect. This, and the effect of the programme on SEND status at ages 14 and 16, suggests cost benefits with implications for the programme's financial viability.

⁵ Suggate, S. P. (2016). A Meta-Analysis of the Long-Term Effects of Phonemic Awareness, Phonics, Fluency, and Reading Comprehension Interventions. *Journal of Learning Disabilities*, 49, 77-96.

2 Introduction

One of the key tasks of schooling is to ensure that children become confident readers and writers, able to access the curriculum and to be prepared for the myriad of demands on their literacy skills in adult life. It is widely considered that children with reading difficulties should be offered early intervention and this is supported by the evidence of its short-term effectiveness (e.g. Wasik & Slavin, 1993; Torgesen, 2000; National Reading Panel, 2000; Willows, 2001; Ehri, Nunes, Willows, et al., 2001; Suggate, 2010; Swanson, Hoskyn, & Lee, 1999). Early intervention offers an opportunity to prevent a widening gap between poor readers and their peers as they move through school (Stanovich, 1986; Chall, 1983). Without action, poor readers read less than their peers (Allington, 1984; Biemiller, 1977-78; Clay, 1967; Juel, 1988), which in turn holds back their language development, their general knowledge and even their IQ.

The aim of Every Child a Reader (ECAR) was to target those with reading difficulties (mostly living in poverty) and make sure that they are as literate as their six year old peers. One measure being adopted to promote this aim is to make Reading Recovery widely available. Reading Recovery is an intensive one-to-one reading programme aimed at children in their second year of schooling who are not making satisfactory progress in literacy even after high quality classroom instruction. Evidence from the literature, including a meta-analysis by D'Agostino and Harme (Hurry & Sylva, 2007; D'Agostino & Harme, 2016) and from an earlier sweep of the current study conducted by Burroughs-Lange & Douetil (2006) demonstrates the impressive effectiveness of Reading Recovery to raise reading levels for children with difficulties, both immediately post-intervention and at the end of Key Stage 1.

However, there is a shortage of information on the durability of the gains made during early reading interventions, either for Reading Recovery or other methods (D'Agostino & Harme, 2016; Suggate, 2016). This information is important in order to plan a strategy which ensures that children at risk of reading difficulties maximise their potential at the end of Key Stages 2, 3 and 4. The early developmental stages of literacy acquisition are important in determining later success, however, other factors will also exert their influence on developing children, such as their cognitive and linguistic abilities, their behaviour and environmental factors relating to home and school. Apart from Hurry and Sylva (2007) and the follow-up of the current evaluation when children were aged 10 years (Hurry, 2012), the longest follow-up of Reading Recovery children has been to Grade 3 (D'Agostino & Harme, 2016). Effects of Reading Recovery appear to be reliably sustained to Grade 2 (Holliman & Hurry, 2013; Hurry & Sylva, 2007; D'Agostino & Harme, 2016) but more uncertain beyond that point. Similarly, for other early reading interventions, the longer term benefits have been only rarely ascertained. Suggate (2016) conducted a meta-analysis of studies of the long-term effects of 71 as reading interventions (N = 8,161 at post-test) but the average time from immediate post-test to follow-up was only 11 months. Suggate reported an average of small but useful immediate post-test effects ($d_w = 0.37$) that decreased at follow-up ($d_w = 0.22$). Interventions which addressed comprehension (Reading Recovery fell into this category) had greater sustained effects than those that were solely focussed at word and phoneme level. One final study by Blachman and colleagues (Blachman, Schatschneider, Fletcher, Murray, Munger, & Vaughn, 2014) reports moderate effect on children's word reading ($d = .53$ on Woodcock Basic Skills Cluster $d = .62$ on Woodcock Word Identification) a decade after children had received an intensive and reasonably broad based reading intervention for early reading difficulties. The intensity and duration of the intervention was not dissimilar to Reading Recovery, the intervention emphasised the phonologic and orthographic connections in words, focusing on accurate decoding and word recognition, but also worked on fluency, spelling, and reading of both phonetically controlled text as well as trade books that were not phonetically controlled reading. Blachman and colleagues speculated that the lack of long-term effects on comprehension reflected the word level focus of the intervention. It is of interest to see if the broader range of elements addressed in Reading Recovery, including an emphasis on meaning and comprehension might lead to a broader range of sustained benefits for children's reading.

The purpose of the study reported here is to provide much needed information on the long-term effects of the early intervention, Reading Recovery.

2.1 The current evaluation

The current evaluation started in 2005, with a sample of London 6 year olds who had made a slow start in literacy. Children who had received Reading Recovery (N=91) were compared with similar children who attended London schools where Reading Recovery was not offered (N=148). The results of this evaluation have been reported as the children reached the end of Years 1, 2 (Burroughs Lange & Douetil, 2006; ECAR, 2008), 4 (Hurry and Holliman, 2009; Holliman & Hurry, 2013) and 6 (Hurry, 2012). The children receiving Reading Recovery had made significantly greater progress than the comparison group at all four of these follow-ups (effect size immediately post intervention word reading, Cohen's $d = .52$; three years later, reading Cohen's $d = .53$ and writing Cohen's $d = .46$, Holliman & Hurry, 2013; effect size five years post intervention, reading Cohen's $d = .39$ and writing Cohen's $d = .33$, Hurry, 2012).

We now report on further follow-ups as the children reached the end of Years 9 and 11. We have harvested data from the National Pupil Database on identified special educational needs and GCSE results to assess the longer term impact of Reading Recovery. In addition, we have conducted some mini-case studies to give some insight into the broader range of issues implicated in the longer term effectiveness of early literacy intervention.

2.2 Method

The design is a long-term evaluation comparing the literacy attainments of children who received Reading Recovery with children of similar literacy levels who did not. Children were assessed at the beginning of Year 1 (September 2005), selected children received Reading Recovery, all children were re-assessed at the end of Year 1 (July 2006), at the end of Year 2 (July 2007), at the end of year 4 (June-July 2009) and at the end of Year 6 (July 2011). The present study reports on the children in the original study as they complete Year 6 (age 10 to 11 years), five years after the end of the intervention.

2.3 The sample

The London boroughs

The 10 London boroughs selected for the Reading Recovery and comparison samples were among the lowest achieving in England, with very high proportions of children entitled to free school meals. These school contexts have been shown to be among the hardest for raising the achievements of the very lowest groups. In 2005, five London boroughs had Reading Recovery provision in some of their schools. In most cases this was re-activated or extended to enable a half time Reading Recovery teacher to work in selected schools through funding from the Every Child A Reader pilot. The five other London boroughs were selected to form the comparison group because they were similar in population characteristics and KS1 achievement levels. Their involvement was sought because they were to be among Local Authorities (LAs) beginning to implement Reading Recovery in 2006-7 when they would have access to Reading Recovery teacher training.

In the five LAs with Reading Recovery, on average 8.2% of children were achieving **below** the competency of a 7-8 year old, (Level 3) at the end of KS2 when they were 11, with a range from 6.6% to 9.5%. The five LAs with no schools with Reading Recovery averaged 8% of children **below** Level 3, with a range of 7.2% to 9.8%. This shows that the authorities were well matched in terms of overall levels of underachievement at the end of primary schooling. Both groups included some schools with much higher numbers achieving below that level. These were the schools that were recruited for the study.

The Schools

In five London boroughs, 21 infant and primary schools were identified, who in 2005-6 had a Reading Recovery teacher providing literacy intervention in Year 1. In five London boroughs where no schools had any Reading Recovery teaching, 21 schools were nominated by the LA as of most concern for high numbers of children with poor performance in literacy. An earlier report (Burroughs-Lange &

Douetil, 2006) documents that schools were similar in terms of: uptake of free school meals; number of children with English as an additional language; school size and attainment of year 1 children in September 2005. In these 42 schools the eight children considered lowest in literacy formed the basis for the sample for this evaluation.

The Children

The previous Reception teachers and current Year 1 class teachers and school records were consulted to identify the eight children in each class whose progress in literacy learning was of most concern.

Assessment tools were selected to measure a range of early literacy skills in reading, writing and phonic skills. The standard Reading Recovery diagnostic profile (An Observation Survey of Early Literacy Achievement, OSELA, Clay 2013; D'Agostino, Rodgers & Mauck, 2018), including the British Abilities Scales (BAS) Word Reading Test II (BAS, Elliott, Smith & McCulloch, 1996) was used to assess the 8 lowest achieving children in Year 1 (293 children; 145 in 21 RR schools, 148 in 21 comparison schools). This literacy profile assesses concepts about print; letter knowledge; known words in writing and phonic analysis for writing; continuous text reading in books (book level); and word reading in isolation (BAS word reading test).

The Observation Survey (OSELA) was administered individually to each of the lowest achieving eight children in a quiet space away from classroom distractions. It usually takes about half to three quarters of an hour to complete each child's assessment. All research assistants were Reading Recovery teachers previously trained in OS assessment procedures including administering the BAS word reading test.

It was not possible to offer Reading Recovery to all the children in Reading Recovery schools. Of the 145 children in Reading Recovery schools, 91 received Reading Recovery (though not all were successfully discontinued), 54 did not. The selection of children to receive Reading Recovery is made by the teacher and teacher leader, informed by children's performance on the assessments and on age (the lowest achieving children are prioritised, and older children often taken first).

Children were followed up in July 2006, 2007, 2009, 2011, 2014 and 2016. Table 1 shows the number of children assessed at each wave. By the end of Year 11 there was a relatively low attrition from the original sample, 6.76% in the comparison children (CG) group and 7.69% in the Reading Recovery (RR) group. Since the 2016 follow-up was conducted using the National Pupil Database it is likely that many of these untraced children had moved out of England. Comparison between traced and untraced children is presented in the Findings section below.

Table 1: Number of children assessed at each follow-up point, by intervention condition.

	Baseline Sept.2005	First follow July 2006	Second follow July 2007	Third follow July 2009	Fourth follow July 2011	Fifth follow July 2014	Sixth follow July 2016
CG	148	141	140	120	127	128	138
RR	91	90	89	75	80	76	84
Total	239	231	229	195	207	204	222

CG = Comparison Group; RR = Reading Recovery children.

2.4 Measures

At baseline (September 2005), as reported above, children were assessed on the OSELA. To enable analysis, a summary score has been calculated for the sub-tests of the OSELA, in the form of a z score, that is with an average score of 0 and a standard deviation of 1. Children were also assessed on a word recognition and phonic skills measure (WRAPS, Moseley 2003).

At fifth follow-up at the end of Key Stage 3 (July 14) Special Educational Needs (SEN) status was harvested from the National Pupil Database, providing information on children on School Action, School Action Plus and those with a Statement of SEN.

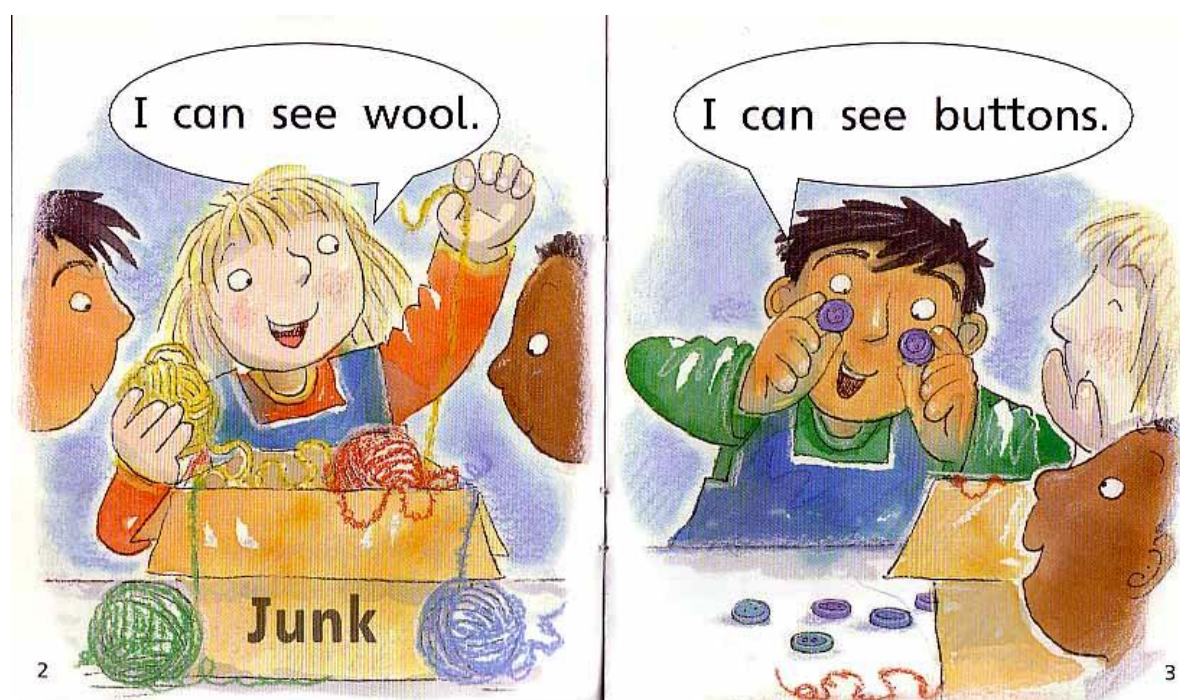
At sixth follow-up at the end of Key Stage 4 (July 16) SEN status and GCSE and equivalents new point scores were harvested from the national Pupil Database. At this time SEN status was only reported for School Action Plus and Statements of SEN or Education Health and Care Plans (EHCP). The new GCSE point scores had been introduced with the highest score being 9 and the lowest 0 for each GCSE, or equivalents, achieved.

Background data was collected on each child at baseline, on: SEN status, uptake of free school meals (FSM); English as an additional language (EAL); gender; age.

2.5 Findings

2.5.1 Baseline – Autumn 2005

The children in this study were selected from economically disadvantaged areas (Burroughs-Lange & Douetil, 2006), with just over half of those traced at 16 taking free school meals at baseline, and 51% with English as an additional language (Table 2). The majority were had weak word reading skills at baseline, 50% not reading even one word on the BAS word reading test and 81% either not reading or only able to read the most basic level books (Level 1 of 26), such as the one illustrated below. They did have some skills in place as measured by the OSELA, such as some letter knowledge and early concepts about print.



Page from a Level 1 book

Table 2: Baseline characteristics of children for whom data was available both at six and sixteen years of age, by group

	Percentage free school meals	Percentage English additional language	Percentage boys	Age mean (SD)	OSELA score mean (SD)	WRAPS score mean (SD)
CG (N=138)	61.6%	53.6%	64.5%	5y 10m (2.4m)	(0.09) (1.00)	11.22 (6.15)
RR (N=84)	42.9%	47.6%	59.5%	5y 9m (3.0m)	(0.14) (1.00)	10.81 (6.38)
Total (N=222)	54.4% ^(a)	51%	60%	5y 9m (2.7m)	0.00 (1.00)	11.32 (7.04)

Note: (a) $p < .05$.

CG = Comparison group; RR = Reading Recovery.

At baseline there were significant demographic differences between the two groups of children, with a lower proportion of the RR children taking free school meals (chi-square (2) = 6.78, $p = .034$). There were no significant group differences in baseline literacy between any of the groups.

Table 3: Comparison between traced and untraced children aged 16 years (July 2016)

Sample	Percentage free school meals	% English additional language	BAS WR mean (SD)	Bk level Mean (SD)	OSELA mean (SD)	WRAPS mean (SD)
Traced (N=222)	54.5%	51.4%	2.05 (3.23)	0.76 (1.17)	(0.02) (0.93)	11.06 (6.14)
Untraced (N=17)	52.9%	47.1%	3.18 (3.04)	0.41 (0.71)	0.05 (1.05)	11.12 (7.48)

BAS WR = BAS II Word Reading; Bk level = Book Level.

The children who were untraced did not differ significantly from those traced, either on demographic factors or literacy levels (Table 3).

2.5.2 Follow-up on academic progress summer 2016

At the end of Year 11 the RR group had significantly higher point scores than the CG group (RR $M = 42.32$, $SD = 19.24$; CG $M = 32.03$, $SD = 19.84$).

Group differences were tested for statistical significance using multi-level hierarchical regression in Stata 15, with child and school levels to account for baseline school level differences, and controlling for any group differences at baseline (OSELA, WRAPS, free school meals and English as an additional language). The RR group had significantly higher GCSE and equivalent point scores than the CG group (RR $M = 42.32$, $SD = 19.24$; CG $M = 32.03$, $SD = 19.84$; $B = 9.94$, $p < .001$), effect size (Cohen's $d = .49$).

As a further sensitivity analysis, to address the difference between experimental groups on uptake of Free School Meals, the regression analyses were repeated separately by Free School Meal status. RR had significantly higher GCSE Scores than the CG for both analyses but the effect was slightly larger for those not taking Free School Meals at baseline (no FSM, $N = 101$, $B = 11.31$, $SE = 4.03$, $p < .005$, Cohen's $d = .56$; FSM, $N = 121$, $B = 7.53$, $SE = 3.72$, $p < .043$, Cohen's $d = .37$).

Group differences were also evident in the more traditional measures of GCSE attainment (5+ A*-C including English and Maths) with a statistically significant chi-square for the overall results shown in Table 4 (chi-square (8) = 26.77, p=.001). Where the adjusted residual in any cell is greater than 2 this indicates that the cell is significantly larger than expected ($\alpha < .05$) or less than -2 significantly smaller than expected. RR pupils were significantly more likely to achieve five or more GCSEs at A*-C including English and Maths than the CG group and significantly less likely to be categorised on the Level 1 threshold of five GCSEs at A*-G than the CG group.

Table 4: Level and type of GCSE, by group

Group		5+ A*-C GCSE including English & Maths		5+ A*-G GCSE		Entry level only – GCSE below G	No passes	Total				
		N	%	N	%	N	%					
CG	N %	31	(23%)	16	(12%)	64	(47%)	15	(11%)	10	(7%)	136 ⁶
	Adjusted residual		(4.4)		0.9		2.5		1.1		1.3	
RR	N %	41	(49%)	11	(13%)	24	(29%)	6	(7%)	2	(2%)	84
	Adjusted residual		3.2		1.2		(2.4)		(1.2)		(1.5)	

CG = Comparison Group; RR = Reading Recovery children.

2.5.3 Special educational needs status in summer 2014 and 2016

At baseline, in terms of special educational needs (SEN) there was only data available on whether or not children had been identified anywhere on the Code of Practice in terms of SEN (School action, School action plus or Statement of SEN). Eighteen children were identified with SEN at that time: 8 (5.4%) of the comparison group and 10 (11.0%) of the Reading Recovery group. Between group differences were not statistically significant.

In 2014, when the children were at the end of Year 9, there were significantly fewer RR children with an SEN status than CG children (chi-square (3) = 12.56, p=.006).

In 2016, when the children were at the end of Year 11, there were significantly fewer RR children with a statement of SEN or Education and Health Care Plan (EHCP) than CG children (chi-square (1) = 7.72, p=.006) (Table 5).

Table 5: Special educational need status at the ages 14 and 16

	No SEN	School action	School action +	Statement/EHCP
Age 14				
CG (N=128)	48.4% (n=62)	24.2% (n=31)	17.2% (n=22)	10.2% (n=13)
RR (N=76)	64.5% (n=49)	14.5% (n=11)	21.1% (n=16)	0% (n=0)
Total (N=204)	54.4% (n=111)	20.6% (n=42)	18.6% (n=38)	6.4% (n=13)
	No SEN	School Action, School Action +		Statement or EHCP

⁶ GCSE NPD data missing on 2 children.

	No SEN	School action	School action +	Statement/EHCP
Age 16				
CG (n=138)	67.4% (n=93)		23.9% (n=33)	8.7% (n=12)
RR (n=84)	72.6% (n=61)		27.4% (n=23)	0% (n=0)
Total (n=222)	69.4% (n=154)		25.2% (n=56)	5.4% (n=12)

CG = Comparison group; RR = Reading Recovery; SEN = special educational need; School Action+ = School Action plus; Statement = Statement of SEN; EHCP = Education Health and Care Plan.

3 Case studies

Semi-structured interviews were conducted with twenty-seven participants (24 male, 3 female) from seven secondary schools across London, and, where possible, their school SENCo⁷ and English teacher. In some cases, SENCos and English teachers opted to respond to a series of short questions on pupil progress in literacy via email. The interview comprised a series of guiding questions about reading habits and literacy and all participants were invited to read a short excerpt (2-3 pages) from their current reading book and also asked to provide a sample of assessed written work. The participant answers and information provided by teachers and SENCos inform this report.

All participants were drawn from the original cohort from this programme and at time of interview were enrolled at one of eight participating secondary schools in London. Twenty pupils had attended a primary school where the Reading Recovery Programme was implemented in 2005, of which 15 had received Reading Recovery and 5 had not, and seven were from the Comparison Group. All interviews were conducted on a one-to-one basis in an informal setting in a school meeting room. Strict ethical guidelines were adhered to at all times and participants were made fully aware that they were under no obligation to answer questions and were also kept fully informed about the nature and purpose of the research.

3.1 Nicholas – Reading Recovery Group.

Nicholas is articulate, calm and polite. He remembers getting some support with his reading and learning decoding strategies in Year 1 at school and his records indicate that he had additional support with his handwriting. He doesn't enjoy reading, preferring sport, music and spending time on social media. Any reading he does is topic-driven (relating to his interests). He did not have a current reading book but was able to read fluently and confidently from an age-appropriate book provided and answer a range of literal, inferential and predictive questions. He generally finds expressing himself in writing difficult. His school has clear structures in place to support pupils and all pupils are closely monitored. Although Nicholas is not on the SEND register and has not had any specific literacy issues or support since joining secondary school, he has been identified as slow reading, writing and information processing and therefore receives an additional 25% extra exam time. In English he has been moved to sit at the front of the class. These interventions have had a positive impact, recognised by Nicholas who is consequently feeling less anxiety and pressure, and by his English teacher who has seen an increase in attainment.

GCSE points 53

Qualifications gained 5 A*-C GCSE or equivalent, including maths and English.

SEN history: School action Years 3 and 6.

3.2 Jasmine – Reading Recovery Group

Jasmine is shy and friendly. She remembers getting support with her reading at primary school and found it helpful. She has a pragmatic attitude to reading where she reads as much as possible in relation to her school work but chooses to spend her free time watching movies, listening to music or using social media. She had a romance novel with her from which she read slowly but fluently and was able to answer a range of literal, inferential and predictive questions. She does not enjoy writing and prefers factual to creative writing. Jasmine's school is positive about her ability and character. She does not have any identified needs and does not receive any support for her school work.

GCSE points 45.

⁷ Special Educational Needs Coordinator.

Qualifications gained 5 A*-C GCSE or equivalent, SEN history: none.

3.3 Toby – Comparison Group

Toby is personable and easy-going. He is a reluctant reader, reading as little as possible. He occasionally reads a tabloid newspaper if there is a copy at home; there are no books at home. He lacks confidence in his reading and is put off if there are too many challenging words. He doesn't receive any support at school in any subjects and has no identified SEND. His English teacher described him as under-achieving. He demonstrates good ability in oral discussion but fails to get his ideas down on paper. He read a short excerpt but struggled with several words (e.g. speculative) and lacked expression. He was able to answer literal comprehension questions only. He enjoys creative writing in his own time but not at school where he feels rushed.

GCSE points 20.

Qualifications gained 5 A*-G GCSE or equivalent.

SEN history: none.

3.4 Ayo – Reading Recovery Group

Ayo is a shy young woman. She remembers getting support for her reading at primary school and has had further booster English lessons in years 8 and 9 at secondary school. Her records indicate that she received 1:1 support sessions twice a week in primary school but that she has no identified SEND at the time of interview. She struggles with anxiety about her performance at school. Ayo is very positive about reading and enjoys it but now has little time to read because of exam pressure and responsibilities to help at home with her siblings. She struggles to read about topics that do not interest her. She does not like writing and finds factual writing particularly difficult. Her school has assessed her with a reading age of 12 (age 14y 5m) and, in spite of extra help through group English booster classes, she is not making expected progress. The school was not providing any further support.

GCSE points 26.

Qualifications gained 5 A*-G GCSE or equivalent.

SEN history: School action plus Years 3 and 6.

4 Discussion and conclusions

We report here on the sustained effects of Reading Recovery ten years after intervention when children had taken their GCSEs, the first level of high stakes national qualifications with value for employment (Wolf, 2011). Forty-nine percent of 16 year olds who had received Reading Recovery achieved five plus GCSEs A*-C including English and Maths, compared to a national average of 54% in 2016 (DfE, 2017). Thus these pupils in the bottom 20% of readers at age six were performing only 5% below the national average at age 16. They were doing significantly better than the comparison children only 23% of whom achieved five plus GCSEs A*-C including English and Maths. This significant difference between Reading Recovery and Comparison Children in their GCSE results was confirmed when their point scores were compared, controlling for baseline literacy and demography. The effect size of .49 (Cohen's *d*) compares with the substantial effects reported by Blachman and colleagues ($d = .53$ for Basic Skills cluster and $d = .62$ for Word Identification; Blachman, Schatschneider, Fletcher, Murray, Munger, & Vaughn, 2014), following a similarly intensive early intervention for children with reading difficulties, but on a much broader outcome measure.

In addition, the Reading Recovery children were significantly less likely to be identified as having Special Educational Needs at age 14 and 16 than comparison children.

Although it is predicted that effective early intervention will lead to better long term reading outcomes the evidence base is sparse. The results reported here provide empirical support for the proposition that early intervention is effective. This is of value both theoretically but also practically. Reading Recovery is a resource intensive intervention and the possibility that it can have long-lasting effects of economic consequence is significant for policy makers who are tasked with managing budgets across the age range.

5 Limitations

There are two main limitations in this study. Firstly, the assignment to Reading Recovery and Comparison conditions was not random though there were no significant differences in the literacy levels of the children in the two groups. There were however group differences in the proportions of children taking free school meals. Secondly, the children in this study were economically disadvantaged and a relatively high proportion spoke English as an additional language. This reflected the focus of the initiative and the geographical location of the study in multi-cultural London but may have implications for generalisability to more affluent mono-cultural communities.

6 References

- Allington, R.L. (1984). Content coverage and contextual reading in reading groups. *Journal of Reading Behavior*, 16, 85-96.
- Biemiller, A. (1977-78). Relationships between oral reading rates for letters, words, and simple text in the development of reading achievement. *Reading Research Quarterly*, 13, 223-253.
- Blachman, B. A., Schatschneider, C., Fletcher, J. M., Murray, M. S., Munger, K. A., & Vaughn, M. G. (2014). Intensive reading remediation in grade 2 or 3: Are there effects a decade later? *Journal of Educational Psychology*, 106, 46–57. doi:10.1037/a0033663.
- Burroughs-Lange, S. & Douetil, J. (2006) Evaluation of Reading Recovery in London Schools: Every Child a Reader 2005-06. <http://www.everychildareader.org/pub/index.cfm>.
- Bus, A. & van Ijzendoorn, M. (1999). Phonological awareness and early reading: A meta-analysis of experimental training studies. *Journal of Educational Psychology*, 91, 403–414.
- Byrne, B., Fielding-Barnsley, R. & Ashley, L. (2000). Effects of preschool phoneme identity training after six years: Outcome level distinguished from rate of response. *Journal of Educational Psychology*, 92(4), 659–667.
- Chall, J.S. (1983). *Stages of Reading Development*. New York: McGraw-Hill.
- Clay, M.M. (1967). The reading behaviour of five year old children: a research report. *New Zealand Journal of Educational Studies*, 2, 237-248.
- Clay, M (2013). *An Observation Survey of Early Literacy Achievement*. London: Heinemann.
- D’Agostino, J., Rodgers, E. & Mauck, S. (2018). Addressing Inadequacies of the Observation Survey of Early Literacy Achievement. *Reading Research Quarterly*, 53, 56-69. doi:10.1002/rrq.181.
- D’Agostino, J.V. & Harmey, S.J. (2016) An International Meta-Analysis of Reading Recovery, *Journal of Education for Students Placed at Risk (JESPAR)*, 21:1, 29-46, DOI: 10.1080/10824669.2015.1112746.
- Denton, C.A., Ciancio, D.J., Fletcher, J.M. (2006). Validity, Reliability, and utility of the Observation Survey of Early Literacy Achievement. *Reading Research Quarterly*, Vol 41, (1), pp 8-34.
- DfE (2017). *Revised GCSE and equivalent results in England, 2015 to 2016*. SFR03/2017. London: DfE. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/584473/SFR03_2017.pdf. Accessed 8/1/18.
- Elliott, P., Smith, P. & McCulloch, K. (1996) *British Abilities Scales*. Windsor: NFER-Nelson.
- Ehri, L. C., Nunes, S. R., Stahl, S. A., & Willows, D. M. (2001). Systematic phonics instruction helps students learn to read: Evidence from the National Reading Panel’s meta-analysis. *Review of Educational Research*, 71, 393–447.
- Ehri, L. C., Nunes, S. R., Willows, D. M., Schuster, B. V., Yaghoub-Zadeh, Z., & Shanahan, T. (2001). Phonemic awareness instruction helps children learn to read: Evidence from the National Reading Panel’s meta-analysis. *Reading Research Quarterly*, 36, 250–287.
- Hattie, J. (2012) *Visible Learning for Teachers: Maximizing Impact on Learning*. London: Routledge.
- Holliman, A.J., and Hurry, J. (2013) The effects of Reading Recovery on children's literacy progress and Special Educational Needs status: A three-year follow-up study. *Educational Psychology*, 33(6), pp. 719-733.
- Hurry, J. and Sylva, K. (2007) Long-term outcomes of early reading intervention. *Journal of Reading Research*, 30, 227-248.
- Juel, C. (1988). Learning to read and write: a longitudinal study of fifty-four children from first through fourth grade. *Journal of Educational Psychology*, 80, 437-447.
- Kispal, A., Hagues, N. & Ruddock, G. (1994) *Progress in English 7*. Windsor: NFER-Nelson.

- Moseley, D. (2003). *Word Recognition and Phonic Skills*, (2nd Edition) Abingdon: Hodder & Stoughton.
- National Reading Panel (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*. Washington, DC: National Institute of Child Health and Human Development/National Institutes of Health.
- Stanovich, K.E. (1986). Matthew effects in reading: some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, 21(4), 360-406.
- Suggate, S. P. (2010). Why “what” we teach depends on “when”: Grade and reading intervention modality moderate effect size. *Developmental Psychology*, 46, 1556–1579. doi:10.1037/a0020612.
- Suggate, S. P. (2016). A Meta-Analysis of the Long-Term Effects of Phonemic Awareness, Phonics, Fluency, and Reading Comprehension Interventions. *Journal of Learning Disabilities*, 49, 77-96.
- Swanson, H. L., Hoskyn, M., & Lee, C. (1999). *Interventions for students with learning disabilities*. New York, NY: Guilford.
- Torgesen, J.K. (2000). Individual differences in response to early interventions in reading: The lingering problem of treatment resisters. *Learning Disabilities Research & Practice*, 15, 55–64.
- Wasik, B.A. & Slavin, R.E. (1993). Preventing early reading failure with one-to-one tutoring: a review of five programs. *Reading Research Quarterly*, 28(2), 179-200.
- Wolf, A. (2011). *Review of Vocational Education – The Wolf Report*. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/180504/DFE-00031-2011.pdf. Accessed 8/1/18.