Foundations
What Works Centre for Children & Families

Last reviewed: September 2017

Intervention website: https://www.ucl.ac.uk/reading-recovery-europe/about-reading-recovery/

GUIDEBOOK INTERVENTION INFORMATION SHEET

Reading Recovery

Please note that in the 'Intervention summary' table below, 'child age', 'level of need', and 'race and ethnicities' information is **as evaluated in studies**. Information in other fields describes the intervention as **offered/supported by the intervention provider**.

Intervention summary	
Description	Reading Recovery is an intensive school-based intervention for children with low literacy attainment aged 5 to 6 years. It is delivered by a trained teacher to children individually. The intervention aims to improve children's reading and writing to enable them to read at age-appropriate levels.
Evidence rating	3+
Cost rating	3
Child outcomes	• Enhancing school achievement and employment - Improved speech, language and communication.
Child age (population characteristic)	5 to 7 years
Level of need (population characteristic)	Targeted Indicated
Race and ethnicities (population characteristic)	• African American–Black • American Indian • Asian • Hispanic–Latino • White.

Intervention summary	
Type (model characteristic)	Individual
Setting (model characteristic)	Primary school
Workforce (model characteristic)	Trained teacher
UK available?	Yes
UK tested?	No

Model description

Reading Recovery is a school-based intervention for children with low literacy attainment aged 5 to 6 years.

It is delivered by a highly trained teacher to children individually. Children receive between 60 and 100 sessions until they are found in assessment to have completed the intervention successfully. Reading Recovery begins with a diagnostic assessment of children's reading strengths and needs. Each session is tailored to children and typically includes:

- Reading two or three books that the child can read easily, to develop fluency and independent control
- An assessment of the child's independent reading at instructional level to inform teaching decisions
- Letter and word work
- Composing and writing a message or story
- Introducing and reading a new book with new challenges for learning.

These sessions therefore aim to improve phonemic awareness, vocabulary, reading fluency, and reading comprehension, as well as children's ability to monitor, problem-solve, and correct themselves as they read and write increasingly complex texts.

The intervention aims to improve children's reading and writing to enable them to read at age-appropriate levels, or to refer them to further supplemental or longer-term support if they do not reach these levels.

Target population

Age of child	5 to 6 years
Target population	Children with low literacy attainment aged 5 to 6 years

Please note that the information in this section on target population is as **offered/supported by the intervention provider**.

Theory of change

Why		Who	How	What		
Science-based assumption	**Science-based assumption**	**Science-based assumption**	**Intervention**	**Short-term outcomes**	**Medium-term outcomes**	**Long-term outcomes**
Lack of functional literacy is a barrier to academic achievement and positive life chances.	Lack of functional literacy and low engagement in reading in childhood is a barrier to accessing the curriculum and achieving at school.	Pupils who are reading at below the age-expected level.	Trained teachers have daily session with pupils to improve reading skills, including decoding and comprehension, through reading and writing practice, and work on phonics and vocabulary.	• Improved pupil reading (decoding) • Improved pupil reading (comprehension) • Improved pupil writing.	• Improved access to the curriculum • Increased academic achievement.	• Increased academic achievement • Improved life chances in adulthood.

Implementation requirements

Who is eligible?	Children with low literacy attainment aged 5 to 6 years.
How is it delivered?	Reading Recovery is delivered in 60 to 100 daily sessions of half an hour duration each by one practitioner, to individual children.
What happens during the intervention?	During sessions, which are tailored to individual children's needs, children typically: • Read two or three books which they can read easily, to develop fluency and independent control • Do letter and word work • Compose and write a message or story • Read a new book • Are assessed in their independent reading at instructional level, to inform teaching decisions.
Who can deliver it?	The practitioner who delivers this intervention is a Reading Recovery Teacher.
What are the training requirements?	The practitioners have 20 half days of intervention training over the course of a year. Booster training of practitioners is recommended (teachers who continue to teach Reading Recovery attend six half-day sessions of continuing professional development to maintain their accreditation).
How are practitioners supervised?	It is recommended that practitioners are supervised by one host-agency supervisor, with one full-time year of intervention training to qualify as a Teacher Leader.
What are the systems for maintaining fidelity?	Intervention fidelity is maintained through the following processes: • Training manual • Other printed material • Other online material • Face-to-face training • Fidelity monitoring • Minimum international standards for implementation and use of the trademark via two international professional bodies – International Reading Recovery Trainer Organisation (IRRTO), and Marie Clay Trust in New Zealand.
Is there a licensing requirement?	No

Implementation requirements (Cont.)

***Contact details**	Organisation: Institute of Education, UCL Email address: ioe.ilc@ucl.ac.uk Website: https://www.ucl.ac.uk/reading-recovery-europe/about-reading-recovery/ *Please note that this information may not be up to date. In this case, please visit the listed intervention website for up to date contact details.

Evidence summary

Reading Recovery's most rigorous evidence comes from two RCTs which were conducted in the United States. This intervention can be described as evidence-based: it has evidence from at least one rigorously conducted RCT or QED demonstrating a statistically significant positive impact on at least one child outcome, as well as at least one more RCT or QED.

These studies identified statistically significant improvements in children's reading and writing abilities, and early literacy skills.

Child outcomes			
Outcome	**Improvement index**	**Interpretation**	**Study**
Improved reading ability	+42	6.07-point improvement on the Observation Survey of Early Literacy (Ohio Word Test)	1
Improved reading ability	+17	3.57-point improvement on the Iowa Test of Basic Skills (Reading Words Scale)	2
Improved reading ability	+48	7.65-point improvement on the Observation Survey of Early Literacy (Text Level Task)	1
Improved concepts about print	+36	2.67-point improvement on the Observation Survey of Early Literacy (Concepts about Print task)	1

Improved writing ability	+32	11.03-point improvement on the Observation Survey of Early Literacy (Writing Vocabulary Task)	1
Improved phonics	+36	5.89-point improvement on the Observation Survey of Early Literacy (Hearing and Records Sounds in Words task)	1
Improved early literacy	+31	43.49-point improvement on the Observation Survey of Early Literacy	1
Improved early literacy			3
Improved reading (comprehension)	+17	3.9-point improvement on the Iowa Test of Basic Skills (Comprehension Scale)	2

Search and review

	Number of studies
Identified in search	20
Studies reviewed	3
Meeting the L2 threshold	1
Meeting the L3 threshold	2
Contributing to the L4 threshold	0
Ineligible	N/A

Individual study summary: Study 1

Study 1	
Study design	RCT
Country	United States
Sample characteristics	94 first-grade children, approximately 6 years old, across 47 classrooms in 14 US states
Race, ethnicities, and nationalities	• 42.5 % White • 42.5 % African American–Black • 13.5 % Hispanic–Latino • 1.5 % Asian.
Population risk factors	• Selected by teachers as at risk for reading • 48% received free school lunches • 11.5% received reduced-price school lunches.
Timing	• Baseline • Post-intervention.
Child outcomes	• Improved reading ability – decoding (child assessment) • Improved reading ability – comprehension (child assessment) • Improved early literary (child assessment) • Improved writing ability (child assessment).
Other outcomes	None
Study Rating	3
Citation	Schwartz, R. M. (2005) Literacy learning of at-risk first-grade students in the Reading Recovery early intervention. *Journal of Educational Psychology*. 97 (2), 257.

Brief summary

Population characteristics

This study involved a sample of 94 children in first-grade classes in the United States, who were selected as having the lowest reading ability in their class. 47 teachers each selected two pupils, based on their performance in the Observation Survey of Early Literacy. There was also a low-

average reading and high-average reading group, with one pupil selected by each teacher, but these two groups are not reported on here.

51% of the sample were boys and 49% were girls. The mean age of children in the Reading Recovery group was 6 years 5.4 months, and in the control group 6 years 4.4 months. For those for whom data was available, 48% received free school lunches, 11.5% received reduced-price school lunches, and 41.5% did not receive lunch subsidies. 42.5% of the sample was White, 42.5% African American–Black, 13.5% Hispanic–Latino, and 1.5% Asian.

Study design

94 children were randomly assigned to Reading Recovery or to a business as usual wait-list control group; for each pair of children in a class, one was randomly assigned to Reading Recovery and the other to the control group through programmed random assignment. It was reported that there were no baseline differences between the groups.

Measurement

Assessments took place at baseline, and at post-intervention (either after the 20-week intervention, or when the child was judged to meet the criteria to terminate the intervention sooner).

At baseline and post-intervention

- **Child assessment** measures included the Observation Survey of Early Literacy Achievement (administered by teachers).

At post-intervention only

- **Child assessment** measures included the Yopp-Singer Phoneme Segmentation Task, a Sound Deletion Task, the Slosson Oral Reading Test – Revised, and the Degrees of Power Reading Test (administered by teachers).

Study retention

Post-intervention

79% of the sample (N = 74) was retained at post-intervention, 79% in the Reading Recovery group (N=37), and 79% in the control group (N=37).

Results

Data-analytic strategy

The Reading Recovery and wait-list control groups were compared at post-intervention using simple effects (ANOVA). Only the Observation Survey of Early Literacy Achievement was administered pre- and post-test, but a repeated measures design was not used in this analysis.

Findings

The study observed statistically significant benefits favouring Reading Recovery families, including improvements in reading ability (decoding and comprehension) and writing ability.

Study 1: Outcomes table

Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Child outcomes					
Reading ability (comprehension)	An Observation Survey of Early Literacy Achievement – text level	d=2.02	Yes	74	Post-intervention
Letter identification	An Observation Survey of Early Literacy Achievement – Letter Identification	No information	Yes	74	Post-intervention
Reading ability (decoding)	An Observation Survey of Early Literacy Achievement – Ohio Word Test	d=1.38	Yes	74	Post-intervention
Concepts about print	An Observation Survey of Early Literacy Achievement – Concepts about Print	d=1.10	Yes	74	Post-intervention
Writing ability	An Observation Survey of Early Literacy Achievement – Writing Vocabulary	d=0.90	Yes	74	Post-intervention

Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Phonics ability	An Observation Survey of Early Literacy Achievement – Hearing and Recording Sounds in Words	d=1.06	Yes	74	Post-intervention
Phonics ability	Yopp-Singer Phoneme Segmentation Task		No	74	Post-intervention only
Phonics ability	Sound Deletion Task		No information	74	Post-intervention only
Reading ability (decoding)	The Slosson Oral Reading Test – Revised	d=0.94	Yes	74	Post-intervention only
Reading ability (comprehension)	Degrees of Power Reading Test		No	74	Post-intervention only

Individual study summary: Study 2

Study 2	
Study design	RCT
Country	United States
Sample characteristics	9,784 children with the lowest 8 scores in their school's first grade on the Observation Survey of Early Literacy Achievement, across 1,254 schools

Study 2	
Race, ethnicities, and nationalities	• Black – 12.5% • Hispanic – 19.5% • White – 43% • Other – 25%.
Population risk factors	• Children were selected for low reading level • 19% had English Language Learner status.
Timing	• Baseline • Post-intervention.
Child outcomes	• Improved reading ability – decoding (child assessment) • Improved reading ability – comprehension (child assessment) • Improved early literary (child assessment).
Other outcomes	None
Study Rating	3
Citation/s	May, H., Sirinides, P., Gray, A. & Goldsworthy, H. (2016) *Reading Recovery: An evaluation of the four-year i3 scale-up. A research report*. Consortium for Policy Research in Education.

Brief summary

Population characteristics

This study involved a sample of 9,784 children with the lowest 8 scores in their school's first grade on the Observation Survey of Early Literacy Achievement, across 1,254 schools in the United States.

60% of the Reading Recovery group were boys and 61% of the control group were boys. 19% of both Reading Recovery and control groups had English language learner status. 12.5% of the sample were Black (12% in the Reading Recovery group and 13% in the control group); 19.5% were Hispanic (20% in Reading Recovery and 19% in control); 43% were White (42% in Reading Recovery and 44% in control), and 25% were Other (26% in Reading Recovery and 24% in control).

Study design

9,784 children were block randomised within school (eight children per school), stratified by English language learner status and Text Reading Level. Children were matched into pairs within schools (four pairs) by English Language Learner designation, and then Text Reading Level Scores, and then one child in each pair was randomly assigned to the Reading Recovery group, and the

other to the wait-list control. There were no differences in baseline characteristics between groups in the analytic sample.

Child in the wait-list control group received class reading lessons as usual, and any other usual interventions for children with low literacy levels.

Measurement

Assessments took place at baseline (pre-intervention) and at the end of the intervention (post-intervention, whenever the intervention finished; both children in a matched pair received the post-intervention assessment at the same time).

- **Child assessment** measures included the Iowa Test of Basic Skills (ITBS) Reading Total, ITBS Reading Comprehension and Reading Words subtests, and Observation Survey of Early Literacy Assessment (OS) (administered by other Reading Recovery teachers or teacher leaders, who did not administer the intervention).

Study retention

At post-intervention, 70% of the sample was retained in the analytic sample of matched pairs (N=6,888).

Results

Data-analytic strategy

A three-level hierarchical linear model was used, with students nested within matched pairs, and matched pairs nested within schools. Pre-test scores were controlled for, with Text Reading Level scores as a covariate, a four-level fixed effect for year, an interaction effect for treatment by year, a random effect for matched pair, a random effect for overall school performance (i.e. school intercepts), and a random effect for the impact of Reading Recovery (i.e. school treatment effects).

Findings

The study observed consistent, statistically significant benefits favouring Reading Recovery children, including improvements in early literacy, reading (decoding) and reading comprehension.

Study 2: Outcomes table

Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Child outcomes					
Reading ability	Iowa Test of Basic Skills (ITBS) Reading Total	Glass' delta = 0.48	Yes	6,888	Post-intervention
Reading ability (comprehension)	ITBS Reading Comprehension subtest	Glass' delta =0.43	Yes	6,888	Post-intervention
Reading ability (decoding)	ITBS Reading Words subtest	Glass' delta =0.43	Yes	6,888	Post-intervention
Early literacy	Observation Survey of Early Literacy Assessment (OS)	Glass' delta = 0.89	Yes	6,888	Post-intervention

Individual study summary: Study 3

Study 3	
Study design	QED
Country	United States
Sample characteristics	592 children aged 5 years 10 months to 7 years 7 months
Race, ethnicities, and nationalities	• 79% / 74% White (Treatment / Control) • 13% / 17% African American • 5% / 7% Hispanic • 2% / 1% Asian • 2% / 1 % American Indian.

Study 3	
Population risk factors	Children in the Reading Recovery group were in the 20% lowest achieving first-grade pupils in each school
Timing	• Baseline • Approximately 4-month follow-up • 2-year follow-up • 3-year follow-up.
Child outcomes	• Improved reading ability • Improved early literacy.
Other outcomes	None
Study Rating	2
Citation	D'Agostino, J. V., Lose, M. K. & Kelly, R. H. (2017) Examining the sustained effects of Reading Recovery. *Journal of Education for Students Placed at Risk (JESPAR)*. 22 (2), 116–127.

Brief summary

Population characteristics

This study involved 592 children across 133 schools in Michigan, in the United States. Children in the Reading Recovering group were in the 20% lowest achievers in first grade.

In the Reading Recovery group, 79% of pupils were White, 13% African American, 5% Hispanic/Latino, 2% Asian, and 2% American Indian. In the control group, 74% of pupils were White, 17% African American, 7% Hispanic/Latino, 1% Asian, and 1% American Indian. About 8% of Reading Recovery pupils and 4% control pupils were English Language Learners. The study did not include information about gender.

Study design

592 children across 133 schools participated in this quasi-experimental design study. Subclassification propensity score matching was conducted on pupils who had received Reading Recovery and on pupils who had been randomly selected by the schools to receive the same baseline measure (as part of a national survey to provide normative information to evaluate Reading Recovery). Propensity Score matching was based on OSELA baseline scores, ethnicity (minority ethnic status), and English Language Learner status. Because children in the control group were randomly selected, rather than being from the lowest 20% achievers, the groups differed in the proportion who were most and least eligible for Reading Recovery. The propensity

score (probability of being eligible for Reading Recovery) was entered into the analysis as a covariate.

Measurement

Assessments took place at baseline (pre-intervention), and at four-month, two-year, and three-year follow-up.

- **Child assessment** measures included the Observation Survey of Early Literacy Achievement (OSELA) (administered by teachers).
- **Administrative records** included the Michigan Education Assessment Program (MEAP) reading scale scores.

Study retention

Post-intervention, Four-month follow-up, and Two-year follow-up

Information on retention is not reported but can be calculated as approximately 99% (N=588).

Results

Data-analytic strategy

A MANCOVA was conducted with treatment-control group and eligibility group as between-subjects factors, the propensity score (probability of being eligible for the treatment) as a covariate, and the five post-tests as outcome measures. The covariates used were limited in number and did not cover all demographic variables relevant to the outcome. Single-factor ANCOVA and follow-up tests served to interpret identified treatment effects. Intent-to-treat analysis was used.

Findings

The study observed significant benefits favouring Reading Recovery children, including improvements in reading ability and early literacy. The benefits to reading ability were sustained after two years.

Study 3: Outcomes table

Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Child outcomes					
Reading ability – Early Literacy	Observation Survey of Early Literacy Achievement (OSELA)		Yes	588	Post-intervention 4-month follow-up

Outcome	Measure	Effect size	Statistical significance	Number of participants	Measurement time point
Reading ability	Michigan Education Assessment Program (MEAP) reading scale		Yes	588	3-year follow-up 4-year follow-up

Other studies

The following studies were identified for this intervention but did not count towards the intervention's overall evidence rating. An intervention receives the same rating as its most robust study or studies.

Baenen, N., Bernhole, A., Dulaney, C. & Banks, K. (1997) Reading Recovery: Long-term progress after three cohorts. *Journal of Education for Students Placed at Risk*. 2 (2), 161–181. **This reference refers to a randomised control trial, conducted in the USA.**

Burroughs-Lange, S. & Douetil, J. (2006) *Evaluation of Reading Recovery in London schools: Every Child A Reader, 2005-2006*. Institute of Education, University College London.

Burroughs-Lange, S. & Douetil, J. (2007) Literacy progress of young children from poor urban settings: A Reading Recovery comparison study. *Literacy Teaching and Learning*. 12 (1), 19–46. **This reference refers to a quasi-experimental design, conducted in the UK.**

Center, Y., Wheldall, K., Freeman, L., Outhred, L. & McNaught, M. (1995) An evaluation of Reading Recovery. *Reading Research Quarterly*. 30 (2), 240–263. **This reference refers to a quasi-experimental design, conducted in Australia.**

Chapman, J. W., Tunmer, W. E. & Prochnow, J. E. (2001) Does success in the Reading Recovery program depend on developing proficiency in phonological-processing skills? A longitudinal study in a whole language instructional context. *Scientific Studies of Reading*. 5 (2), 141–176. **This reference refers to a quasi-experimental design, conducted in New Zealand.**

D'Agostino, J. V. & Murphy, J. A. (2004) A meta-analysis of Reading Recovery in United States schools. *Educational Evaluation and Policy Analysis*. 26 (1), 23–38. **This reference refers to a meta-analysis.**

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. **This reference refers to a meta-analysis.**

Gapp, S. C., Zalud, G. & Pietrzak, D. (2009) End of Intervention Reading Recovery® decisions and subsequent achievement. *Reading Improvement*. 46 (1), 9. **This reference refers to a quasi-experimental design, conducted in the USA.**

Hurry, J. & Sylva, K. (2007) Long-term outcomes of early reading intervention. *Journal of Research in Reading*. 30 (3), 227–2. **This reference refers to a randomised control trial, conducted in the UK.**

Hurry, J. (2012) *The impact of Reading Recovery five years after intervention. Report for the Every Child a Reader Trust*. Institute of Education, University College London. **This reference refers to a quasi-experimental design, conducted in the UK.**

Iversen, S., Tunmer, W. E. & Chapman, J. W. (2005) The effects of varying group size on the Reading Recovery approach to preventive early intervention. *Journal of Learning Disabilities*. 38 (5), 456–472. **This reference refers to a quasi-experimental design, conducted in the USA.**

Pinnell, G. S., DeFord, D. E. & Lyons, C. A. (1988) *Reading Recovery: Early intervention for at-risk first graders*. Educational Research Service. **This reference refers to a randomised control trial, conducted in the USA.**

Pinnell, G. S., Lyons, C. A., Deford, D. E., Bryk, A. S. & Selzer, M. (1994) Comparing instructional models for the literacy education of high-risk first graders. *Reading Research Quarterly*. 29, 8–39. **This reference refers to a randomised control trial, conducted in the USA.**

Ruhe, V. & Paula, M. (2005) The impact of Reading Recovery on later achievement in reading and writing. *ERS Spectrum*. 23 (1), 20–30. **This reference refers to a pre-post study, conducted in the USA.**

Schmitt, M. C. & Gregory, A. E. (2005) The impact of an early literacy intervention: Where are the children now? *Literacy, Teaching and Learning*. 10 (1), 1. **This reference refers to a randomised control trial, conducted in the USA.**

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Note on provider involvement: This provider has agreed to Foundations' terms of reference (or the Early Intervention Foundation's terms of reference), and the assessment has been conducted and published with the full cooperation of the intervention provider.