International research on short and long term outcomes of Reading Recovery, and comparisons with other programmes

Short term outcomes

Center, Y., Wheldall, K., Freeman, L. and McNaught, M. (1995) An evaluation of Reading Recovery. *Reading Research Quarterly*, 30, 2.
Students in ten schools were randomly assigned to Reading Recovery or to a no-intervention control group. At post-test, after 15 weeks of intervention, the Reading Recovery students significantly outperformed controls on all tests measuring words read in context and in isolation.

D'Agostino, J.V., and J.A., 2004, A Meta-Analysis of Reading Recovery in United States Schools, *Educational Evaluation and Policy Analysis*, Spring 2004, Vol. 26, No. 1, pp. 23-38
This study is a meta-analysis of 36 studies of Reading Recovery. The authors found positive program effects for both children who had achieved 'accelerated progress'(reaching average levels for their age after 12-20 weeks) and for those who had not yet reached average levels when their programmes were discontinued. These positive programme effects were evident on both outcomes tailored to the programme and on standardised achievement measures.

Quay, L., Steele, d., Johnson, C. and Hortman, W. (2001) Children's Achievement and personal and social development in a first-year reading program with teachers-in –training. *Literacy teaching and learning: an international journal of early reading and writing,* 5, 2.
Two groups in 34 schools were assigned to Reading Recovery or alternative interventions using quasi-random procedures. At year-end, the Reading Recovery students were superior to the controls on measures of reading and class teacher ratings of writing skills, ability to follow directions, work habits and social interaction.

Reading Recovery National Network (2005*). UK National Monitoring Report, 2004-5*. Data from 2004-5 national monitoring, reporting on 5372 children involved in Reading Recovery, demonstrates that children identified for Reading Recovery had previously made little or no progress in literacy learning in their first full year at school. Nevertheless 84.5% of the children were lifted to average levels of literacy within 20 weeks, moving from an average reading age of 4y 10m to one of 6y 7m, whilst the remaining 17% had moved from being non-readers into early acquisition of literacy, moving from an average reading age of 4y 10m to one of 5y 7m. Children continued to learn at a steady rate after the end of their Reading Recovery programme: with no further intensive support they continued to progress at a normal rate of progress, gaining one month in reading age every month. The number of children from special cohort groups was small and results need to be interpreted with caution, but every one of the 16 asylum seeker children who completed a Reading Recovery programme reached average reading levels (100% success), as did 25 of the 28 'looked after' children (89%) who completed. 64 Traveller children started Reading Recovery in 2004-05. Forty seven of them (73%) completed the programme within the year, which is a good completion rate, very comparable with 'settled' children (of whom 77% complete their programme within the year). 78% of those completing their programme reached average levels for their age**.**

Schwartz, R., 2005. Literacy learning of at-risk first grade students in the Reading Recovery early intervention, *Journal of Educational Psychology*, 2005, vol 97, pp. 257-267
This recent study used the randomised controlled trial methodology regarded as the highest level of research methodology. 148 at-risk first grade students were randomly assigned to receive Reading Recovery during the first part of the school year (experimental group), or the second half of the school year (control group). High-average and low-average students from the same classrooms provided additional comparisons. At the end of the first half of the year, the experimental group showed significantly higher performance than the control group. They achieved results similar to those of the low average and high average groups – they had caught up with their peers.

McDowall, S., Boyd, S. and Hodgen, E. (2005*) Reading Recovery in New Zealand: uptake, implementation and outcomes.* New Zealand Council for Educational Research.
This large-scale study examined the impact of Reading Recovery in New Zealand, where it is used by 67% of schools. The researchers concluded that good gains were made by students in Reading Recovery across all school and student characteristics, indicating that the intervention was effective in a range of contexts. Students with the lowest initial literacy levels tended to make the greatest gains. Headteachers considered Reading Recovery to be a cost-effective intervention that worked well in their schools.

As with many literacy methodologies, Reading Recovery has been subject to politicised debate, with papers circulating on the internet both critical and supportive of its impact. Typical criticisms can be found in a paper by Bonnie Grossen and Gail Coulter (Reading Recovery: an evaluation of benefits and costs), who are involved with Direct Instruction, formerly DISTAR, a commercially available phonics-only programme. The authors argue that Reading Recovery impact data is flawed, as the same person involved in the teaching collect data on the outcomes. This is not so, however: in current UK practice a school involved in Reading Recovery must identify a second member of staff, not involved in the teaching, to conduct the post-treatment assessments. A second criticism is that the assessment tools used (the Reading Recovery Observation survey) emphasise tasks that align with the specific strategies taught in Reading Recovery. Again, this does not match current practice, where in the UK a standardised and well-known reading test (British Ability Scales Word Recognition) is used in addition to the Observation Survey, and demonstrates average reading age gains of four months for every month on the programme. The authors claim that the standard for successful completion of Reading Recovery (to bring pupils to the average level for their class rather than the national average)falls short of the optimum and is inequitable , but in current practice children do not have their programmes discontinued until they reach Reading Recovery Book level 15 , which represents performance at the national English average for Year 2 children in the relevant Reading Recovery 5y9m – 6y 3m age band, and performance above the national average for Year 1 children in the relevant age band. Similarly, children's performance is followed up to end of Key Stage assessments and found in the majority of cases to be at or above national average levels. The paper cites research showing that Reading Recovery does not raise overall school results. This is not the case in the well-led English schools involved in *Every Child A Reader* where whole-school impact is regularly noted. The authors also state that evaluations omit children eligible for Reading Recovery but never served because they lacked prerequisite skills or were already identified for special education, and that entry level percentile scores of children who complete Reading Recovery are high. The UK implementation

of Reading Recovery, however, follows international guidelines very strictly in never excluding any child from the programme, no matter how severe their difficulties or complex their needs. National and local UK evaluations show that children enter the programme with the lowest possible entry scores, and are still successful in catching up with their peers.

A full account of the critiques of Reading Recovery and the response to them can be found at http://www.readingrecovery.org/sections/research/Evidence.asp, in the appendix to a detailed report *What evidence says about Reading recovery*.

Long term outcomes

Three early studies in the New Zealand and the US did not find evidence that Reading Recovery gains were maintained over time (Glynn et al,1989, Reading recovery in context: implementation and outcome. *Educational Psychology*, 12, 3 and 4; DeFord et al, 1990 *The Reading Recovery follow-up study*, Vol 11, 1987-89. Columbus: Ohio State University; Shanahan and Barr,1995 An independent evaluation of the effects of an instructional intervention for at-risk learners, *Reading Research Quarterly*, 30, 4.). A large number of more recent studies, however, including studies in the UK, have found good maintenance over up to five years. Differences may relate to the quality of classroom instruction to which children are returned at the end of their programmes.

Briggs, C., and Young, B.K., 2003, Does Reading Recovery work in Kansas? A Retrospective Longitudinal Study of Sustained Effects. *Journal of Reading Recovery*, Vol 3 No. 1, pp 59 – 64, Reading Recovery Council of North America, Ohio USA. This study compared a sample group of 56 ex-Reading Recovery children with a comparison group of 79 matched fourth graders. It found that children who had successfully completed the Reading Recovery programme in First Grade were working close to the mean of a randomly selected comparison group spanning the whole ability range at Fourth Grade.

Douetil, J. (2004) *The long term effects of Reading Recovery on National Curriculum tests at end of Key Stages 1 and* 2**.** London: Institute of Education**.**
In a sample of more than 600 children who had received Reading Recovery five years previously, half of the children reached National Curriculum Level 4 and above in end of Key Stage tests, and only 20% failed to reach National Curriculum Level 3. Given that these were initially the lowest attaining children, who had made very little progress in learning to read in their first year in school, and were the children most likely to fail to reach national standards, this represents a considerable long-term advantage for children who received the Reading Recovery programme. This study is described in detail in Appendix xx.

Fraser H., MacDougall A., Pirrie A., Croxford L., 2001, *National Evaluation of the Early Intervention Programme.* Strathclyde University.
This study assessed the long-term maintenance of the gains made in Reading Recovery, for 210 children from 17 schools, comparing pupil test scores one year after Reading Recovery with those of subsequent years. Those pupils whose scores decreased by more than one quarter of a standard deviation from the original test were deemed to have lost the initial gain. This is a high standard of evidence, perhaps higher than many school systems might require in practice, and might be thought to underestimate maintenance. Even so, the study found that 60% of pupils had maintained the gains made in Reading Recovery. This figure included all pupils, those who had achieved the goals of the programme and those who had not. In fact pupils who did not achieve the goals of the programme were found to be as likely to maintain the gains they had made as those pupils who reached average levels of literacy.

Hurry, J. and Sylva, K. (1998) *The long term effects of two interventions for children with reading difficulties*. London, QCA.

Reading Recovery and an alternative Phonological Training programme were trialled on a sample of 390 six-year olds from 63 schools in London and Surrey. 95 children received Reading Recovery; 97 children received 40 X ten minute sessions of phonological training and a control group of 198 children received normal school programme which often included additional reading support. At the end of the intervention year Reading Recovery children had made twice as much progress in their reading and spelling as the other two groups (17 months progress compared to 9 months). Phonological training only improved children's phonological skills and to some extent spelling. One year after the intervention, the Reading Recovery children were still significantly ahead of the control group (by approximately six months); the advantage was greater for pupils eligible for FSM and children who were non-readers before the intervention programme. The Phonological Training group were reading and spelling significantly better than the controls but were not as far ahead as the Reading Recovery children. Two years later the Reading Recovery children had a three to four month advantage over the controls on reading, but this difference did not reach statistical significance. There was no effect on spelling. For children who received free school meals, Reading Recovery gave them a significant six to seven month advantage over the controls. For about half the children in the original cohort who could not read at all when they were six, Reading Recovery had a significant long term effect with a six to seven month reading advantage. The Phonological Training group had a three to four month non-significant reading age advantage over controls, but were significantly better spellers. Children eligible for FSM again showed particular advantages. but for children who were non-readers at 6 years the Phonological Training had no significant effect on either reading or spelling. A comparison was made between the groups and their classmates in this final follow-up. The average reading age of classmates was around 10y 1m, slightly below their chronological age of ten and a half, but typical of children living in socially disadvantaged areas. In terms of reading 70% of the children who had received Reading Recovery at the age of six were still performing within the average band for their class four years after the intervention.

Moore, M. and Wade, B. (1998) Reading Recovery: its effectiveness in the long term. *Support for Learning*, 13, 3.
This is a follow-up study of 121 children in 13 different schools who were between 10 and 12 years of age and who had Reading Recovery when they were 6. The comparison group of 121 children were those who at 6 had also had reading difficulties but had not been sufficiently low on the literacy test to warrant being included in the programme because they were not the very lowest achievers in the age group. At follow up the Reading Recovery children wrote longer, more accurate and qualitatively better prose than the controls, were more positive in their attitudes to reading, and had higher reading accuracy and comprehension (by on average 12 months for reading accuracy and 13 months for reading comprehension)

Rowe, K (1995) Factors affecting children's progress in reading: key findings from a longitudinal study *Literacy teaching and learning*, 1, 2.
This longitudinal study followed 5000 children in Victoria, Australia over a period of three years. Children who would by definition have been the lowest achievers, clustered around the 0-10th percentile were at nine, ten and eleven years of age spread across the same achievement range as the rest of the sample; the lower limits of their distribution tended to be higher than those of their non- Reading Recovery exposed. peers

Schmitt, M. C., and Gregory, A. E., 2001, *The Impact of Early Intervention: where are the children now?* Paper presented to the National Reading Conference, San Antonio, Texas

This is a longitudinal study of children in 253 schools in Indiana. 277 children who had received Reading Recovery in Grade 1 were monitored in Grades 2, 3 and 4, and compared with 271 control children in the same Grades who had not received Reading Recovery. The study found that between 83% and 92% of the former Reading Recovery children were reading text at or above their grade level and that two, three, and four years beyond the intervention, Reading Recovery children were performing roughly as well as, or better than, their cohort sample peers on the task of oral text reading.

Vellutino F., Fletcher J.M., Snowling M. and Scanlon D.M., 2004, Specific Reading Disability (dyslexia): what have we learned in the past four decades? a comprehensive review of intervention studies, *Journal of Child Psychology and Psychiatry,* 45:1, pp 2–40

This is not a Reading Recovery research study, but an independent review of dyslexia research. It highlights ideas about easy-to-remediate and hard-to-remediate children: that the only way to sort them out is to offer good intervention in first grade. The authors conclude that high-quality (1:1) tutoring can reduce the incidence of reading difficulties to 1.5% of the whole population. They also note that once remediation has ended, groups who have had 1-1 expert help and their normally achieving peers neither converge nor diverge; they maintain their learning trajectories. How high an intervention raises children's literacy, therefore, is absolutely critical. Raising as many as possible to an absolute level close the average is what matters. Unless this is achieved, the size of the gain scores don't matter.

Whitehead, C., 2004, *An evaluation of the reading skills and reading self-concept of successfully discontinued Reading Recovery pupils three and four years after completing the programme.* MA Dissertation, Institute of Education

This study is an evaluation of the reading skills and reading self-concept of Reading Recovery pupils in Jersey, three and four years after completing the programme. The research sought to determine whether ex-Reading Recovery pupils were still working within the average range in reading in Year 5. Reading performance of 82 Reading Recovery pupils was assessed using verbal Cognitive Ability Test scores and teacher assessment. The reading self-concept of pupils was measured using a self-completion questionnaire and the results of these were compared to pupils with a range of ability in nine Year 5 classes across six schools. *The study indicated that a high proportion of ex-Reading Recovery pupils were achieving within the average range in reading three and four years after receiving the programme.* With regard to reading self-concept, the results were less clear with factors such as gender appearing to have an effect on attitude to reading and text choice. In terms of self-perceptions of skill the results of the ex-Reading Recovery group fell between those of the Low Ability and Average Ability groups**.**

Comparison with other lower-cost alternatives

Research on group and one-to-one intervention

Pinnell, G.S., Lyons C.A., DeFord D.E., Bryk A.S., & Seltzer M., 1994, Comparing Instructional Models for the literacy education of high risk first graders. In *Reading Research Quarterly* 6(1), 83-101
This study has the benefit of an experimental design, with randomly assigned treatments groups, including Reading Recovery as designed; one to one teaching with partially trained teachers; group teaching with fully trained Reading Recovery teachers and a control group. Pupils in the 'Reading Recovery as designed' group significantly out-performed other groups on all measures. Children in the 'group teaching' model made progress, but not sufficient to catch up to the average, and the progress was not so well sustained at later follow up.

Dorn L., and Allen A., 1995, Helping low-achieving first-grade readers: A programme combining Reading Recovery tutoring and small-group instruction. *ETRS Spectrum: Journal of School Research and Information, 13(3), 16-24,* Reprinted in *Literacy Teaching and Learning: An International Journal of Early Literacy*, 2(1), 49-60. This used trained Reading Recovery teachers, working with individuals for part of the day and groups for part of the day. There were 188 children in the study, 95 in Reading Recovery, and 93 in group instruction. The children selected for groups were not the lowest achievers but the next group up, so started at slightly higher levels. Yet whereas 76% of the children taught individually reached average levels for their age, only 30% of those taught in groups did so. This study was replicated by Harrison in 2002, below

Harrison L., 2002, A study on the complementary effects of Reading Recovery and small group instruction for reversing reading failure (Research Summary No 102-103 *Research in Literacy and Teacher Development*). Little Rock, Arkansas, University of Arkansas at Little Rock. This study had 307 children assigned to four groups, but again the lowest achieving were assigned to Reading Recovery, so those receiving group instruction or a combination of group and one to one, were slightly more able, Harrison concludes that

- the lowest attaining children needed one-to-one instruction;
- a small group of children needed one-to-one Reading Recovery followed by group support;
- for some children, small group instruction with a teacher prior to Reading Recovery shortened the length of time needed in Reading Recovery. (UK research by Julia Douetil , however, found that children receiving Reading Recovery after taking part in Early Literacy Support in a group with a TA took longer to reach average levels for their age than children who went straight into Reading Recovery)
- small group instruction was more beneficial for children who needed less supplementary help
- children given group support only needed much longer to catch up with their peers – in this study they needed to receive the group intervention for the whole year

All research quoted in Reading Recovery Council of North America, 2005, *Changing Futures*, Worthington, Ohio

Hurry, J., 2000, *Intervention Strategies to support children with difficulties in literacy during Key Stage 1: Review of Research* London, UK, Institute of Education, University of London, Main findings:
'One to one intervention is more reliable than group programmes. There is very limited evidence of the effectiveness of group level intervention, though some examples have significantly improved children's reading progress'

Iversen, S. (1997). *Reading Recovery as a small group intervention* - unpublished doctoral dissertation, Massey University, Palmerston North, New Zealand
Iverson carefully matched pairs of children to be as close in ability and item knowledge as possible. She taught 45 minute lessons with the pairs. But she found that within a very few weeks, the two children had moved so far apart that the lessons became very difficult, and she found that she was tending to teach each child individually a lot of the time, which meant having to turn her attention away the other. The interventions took longer than normal Reading Recovery programmes.

Iversen, S., Tunmer, W. and Chapman, J. (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 study did conclude that children taught in pairs could achieve the same results as children taught individually if lessons were longer, but the one-to-one intervention in this study was not Reading Recovery – there were differences in the training model, the procedures for selecting children and teaching procedures.

Moss H., and Reason R., 1998, Interactive group work with young children needing additional help in learning to read. *Support for Learning*, Vol 19., pp 304-330
A small scale study with the stated purpose of finding a cheaper alternative to Reading Recovery. It included 16 children (average age at beginning 5yrs 7 mths) from two parallel classes who were making the slowest progress in reading. Children were organised into four 'fairly homogeneous' groups of four and received teaching based on the principles of Reading Recovery but in an interactive group work design. Children made progress, but only 30% of the children achieved the criteria for success of the study, which was "they enjoyed and joined in reading and discussion of stories, they expected their reading to make sense, they could read some 100 words fluently in the context of familiar books, they could read and write all initial sounds, they could read and write a selection of consonant-vowel-consonant words." All of the children were expected to continue to receive additional support after the intervention, and one child was to be start intensive one to one teaching. No follow up study was done to assess the retention of gains.

Torgesen et al, 2005 (in press). In this large US scale study involving 50 schools 772 children with reading difficulties were randomly assigned to either a control group receiving the regular reading instruction provided in their schools, or an experimental group receiving an average of 80 hours of help in small groups - one teacher to three students - using one of four reading programs: Spell Read Phonological Auditory Training (PAT), Corrective Reading, Wilson Reading or Failure Free Reading. The study found that the intensive help provided improved skills for third-graders but was less effective for fifth-graders. Even where there was improvement in both grade levels, the help wasn't enough to enable the children with difficulties catch up with the strong readers, who were continuing to advance. The interventions were relatively unsuccessful with lower-income children. The researchers concluded that 'this

amount of instruction doesn't appear to be enough or the right thing for many of the kids who need it the most'.

Elbaum, Vaughn and Moody (2000) present counter-findings. They synthesised 31 different studies, aiming to explore relative effects of various features of intervention programmes. These features included, among others, small group versus individual instruction and Reading Recovery versus other types of interventions. The authors conclude that small group instruction is just as effective as 1-1 tuition. This conclusion is based, however, on only two studies, both unpublished doctoral dissertations. One (Evans, 1996) was based on case studies of eight children, four randomly assigned to Reading Recovery and one to a small group intervention. The researcher , a teacher with seven years experience of teaching young children, was also the teacher of the small group intervention, and the Reading recovery teacher, whose previous teaching experience had been with older children, was in the first months of her Reading Recovery training year. The children assigned to Reading Recovery and those assigned to the group intervention do not appear to have equivalent pre-test scores. The second study (Acalin, 1995) compared Reading Recovery with a group method called Project Read. The Reading Recovery treatment, however, was not taught by trained Reading Recovery teachers but by special education teachers who had not participated in the required training, and was taught mainly to older children rather than to the defined age group for Reading Recovery.

Research on the use of teaching assistants or volunteers

Wasik, B. and Slavin R. (1993) Preventing early reading failure with one-to-one tutoring: a review of five programmes *Reading Research Quarterly,* Vol 28, no. 2
This study reviewed five one-to-one literacy tutoring programmes and found that those using certified teachers produced larger gains in children's reading than those using classroom assistants. The effect sizes for the programmes taught by classroom assistants or volunteers generally fell in the range of .20 to .75, while the programmes taught by teachers produced average effects from .55 to 2.37. The teacher-delivered and classroom-assistant delivered interventions differed: those delivered by classroom assistants were highly structured, using well-scripted instructional materials and concentrated on phonic skills with very little text reading. In contrast, the teacher administered interventions relied on teachers' judgement, flexibility and knowledge of how children learn.

Brooks, G. (2002) in his *What works for children with literacy difficulties* summary of research in the UK for the DfES reviewed the Better Reading Partnership intervention, in which volunteers or teaching assistants work 1-1 with children for ten weeks. He concludes that the programme led to 'gains in all year groups as long as the children had started reading; it is not successful with non-readers'.

Canning, J. (2004), unpublished report on findings from a pilot of the Fischer Family Trust Wave 3 intervention.
In this intervention teaching assistants with existing literacy expertise (e.g. ELS training and experience) receive three days training alongside the class teacher. They then worked 1-1 with children for 15-20 minutes daily for 10 weeks on a non-scripted programme which requires them to make decisions about what the child needs to learn in each session. The programme is based on Reading Recovery. The average improvement was six months gain in reading age over the ten week period. 12 of the 61 children remained at well below average levels, however, and 4 remained essentially non-readers. The author concludes that children who came into

the programme with very little knowledge e.g. knowing fewer than 10 letters and with no word knowledge proved very challenging and for these children Reading Recovery would be a more appropriate and effective support.

Pinnell, G.S., Lyons C.A., DeFord D.E., Bryk A.S., & Seltzer M., 1994, Comparing Instructional Models for the literacy education of high risk first graders. In *Reading Research Quarterly* 6(1), 83-101
This large-scale experimental field study compared one-to-one intervention with teachers who had limited training in Reading Recovery with intervention by fully trained teachers. Children taught by the fully trained teachers performed significantly better.

Hatcher, P. et al (2005) *Efficacy of small group reading intervention,* paper submitted for publication. This study evaluated the effectiveness of an intervention implemented on a daily basis by a trained teaching assistant, who alternated between small group (3 children) and one-to-one teaching. The programme was targeted at children showing reading delays at the end of their first year at school. It was successful for the majority of children, but not for all: between a quarter and a third of children showed a decline in reading standard scores over the period of the intervention. Those with severe reading problems at the beginning of the study and children in receipt of free school meals tended not to respond to the programme. The author concludes 'we recommend that the approach be adopted as a first line strategy for facilitating the literacy skills but we would emphasise that those children who do not respond are likely to require more intensive intervention'**.**