Primary *and*
Secondary
National Strategies

Guidance

Curriculum and Standards

What works for pupils with literacy difficulties?

The effectiveness of intervention schemes

LA SEN and learning support managers, primary and secondary strategy managers, LA English and literacy managers and consultants, RR teacher leaders. Headteachers, literacy and English subject leaders, SENCOs and inclusion managers in primary, secondary and middle schools

Status: Recommended

Date of issue: 12-2007

Ref: 00688-2007BKT-EN

department for
children, schools and families

what works well

What works for pupils with literacy difficulties?

The effectiveness of intervention schemes

Third edition

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University of Sheffield

December 2007

ST IVES LTD 12-2007

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Acknowledgements

The original version of this report was Brooks, G., Flanagan, N., Henkhuzens, Z. and Hutchison, D. (1998). *What Works for Slow Readers? The Effectiveness of Early Intervention Schemes*. Slough: NFER. www.nfer.ac.uk/publications/other-publications/downloadable-archive-reports/what-works-for-slow-readers-the-effectiveness-of-early-intervention-schemes.cfm

The first revision was Brooks, G. (2002). *What Works for Children with Literacy Difficulties? The Effectiveness of Intervention Schemes*. London: DfES Research Report no. RR380. ISBN 1 84185 830 7 www.dfes.gov.uk/research/data/uploadfiles/RR380.pdf – because of the change of title then, this further revision is called the 'second edition'.

The 2002 edition formed the basis of Enters, I. and Brooks, G. (2005). *Boosting Reading in Primary Schools*. London: Basic Skills Agency. ISBN 1 85990 328 2. Four schemes which had produced suitable evaluation data since 2002 were added; others were dropped.

For this edition, one scheme has been dropped (Knowsley Reading Project), and a number added – see sections 1.5–6.

As in the previous edition, all the new material in this edition is the work of Prof. Greg Brooks, formerly at NFER, at the University of Sheffield since 1 January 2001. He wishes to record his deep gratitude to all the following:

His former colleagues, the other members of the project team at NFER for the original report:

Zenta Henkhuzens, Research Officer

Nicola Flanagan, third-year undergraduate student of University of Surrey, on work experience at NFER in academic year 1997–98

Dr Dougal Hutchison, Principal Research Officer and Chief Statistician

Effie de Souza, Project Secretary

and especially to

all the individuals and organisations who provided us in 1995–98, and Greg in 2002 and 2006–07, with information: without their help none of this project would have been possible on any of the three occasions. They are acknowledged here and on the next three pages.

Acknowledgements of information provided for the 1998 edition and retained for the 2002 and 2007 editions

Local Authorities

Bradford Buckinghamshire Jersey Kirklees

Institutions of Initial Teacher Training

Institute of Education, University of London
Oxford Brookes University

Individuals

Suzi Clipson-Boyles	}	
Diana Bentley	}	Catch Up Literacy
Dee Reid	}	
Martin Miles		AcceleRead AcceleWrite
Jo Wilson		THRASS

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Acknowledgements of information provided for the 2002 edition and retained for the 2007 edition

Local Education Authorities

Bolton	Cumbria	Haringey
Bradford	Derbyshire	Norfolk
Bridgend	Devon	Redcar and Cleveland
Bristol	Durham	Worcestershire
Cornwall	Hampshire	

Individuals

Where individuals' affiliations are not shown in the left-hand column, their affiliations are with the LA mentioned in the right-hand column.

Alan Davies, Director of THRASS	THRASS
Sue Derrington	Phono-Graphix™ in Bristol
Dr Angela Fawcett, University of Sheffield	Interactive Assessment and Teaching, Reader's Intelligent Teaching Assistant, three reviews on DfES website
Ann Foster	Better Reading Partnerships in Durham
Pam Fudge	Reading Recovery in Bristol
Dr Peter Hatcher, University of York	Reading Intervention
Mike Johnson, Manchester Metropolitan University	Multi-sensory Teaching System for Reading
Julie Lawes, Project Director, The Catch Up Project	Catch Up Literacy in Cornwall and Norfolk, and the National experimental study
Prof. Ann Lewis, University of Birmingham	Use of ILS with children with literacy difficulties
Kerry Longhorn	Family Literacy in Hampshire
Anthea Main	Better Reading Partnerships in Worcestershire
Dr Martin Miles, University of Exeter	AcceleRead AcceleWrite in Devon
John Rack, Dyslexia Institute, York	SPELLIT
Heather Swain	Reading Intervention in Cumbria
Andrew Taylor	Better Reading Partnerships in Redcar and Cleveland
Carol Taylor	Better Reading Partnerships in Derbyshire
Prof. Keith Topping, University of Dundee	Cued Spelling, Paired Reading, Paired Writing
Jacqui Worsley	Catch Up Literacy in Norfolk

Acknowledgements of information provided for the 2007 edition

These acknowledgements include many for information which, sadly, could not be used.

Where individuals' affiliations are not shown in the left-hand column, their affiliations are with the LA mentioned in the right-hand column.

Mary Adams, Bath and North East Somerset	Sound Discovery
Rosemary Austin, Cornwall	Read Write Inc. Fresh Start
Jean Barney, North East Lincolnshire	Building Blocks
Dr (now Prof.) Roger Beard, University of Leeds (now at Institute of Education, University of London)	Further Literacy Support
Phil Bowen and Jane Yeomans	ENABLE
John Bowring	The Bowring Code
Donna Boutilier, Sunderland	THRASS
Dr Sue Burroughs-Lange, Institute of Education, University of London	Reading Recovery – Every Child a Reader in London
Jill Canning, Fischer Family Trust	FFT Wave 3
Susan Case, David Philpot and John Walker, Northamptonshire	Sounds~Write
John Catron, York	Reciprocal Teaching
Vivienne Clifford, Harrow	AcceleRead AcceleWrite (original)
Mitch Cronick and Sarah Turner, Oxford University Press	Read Write Inc. and Read Write Inc. Fresh Start
Sarah Couzens	AcceleRead AcceleWrite in Wiltshire
Alan Davies, Director of THRASS	THRASS
Sue Derrington	AcceleRead AcceleWrite and Cued Spelling in Bristol
Ian Enters, for having written, and Carol Taylor of the (former) Basic Skills Agency, for permission to reproduce the paragraphs in italics in section 2.16	
Anthony Feiler	LEAP
Barry Graham and Jen Scott, Pyramid Trust	Pyramid
Gill Hague, Torbay	Toe by Toe
Karen Hanson, Derbyshire	BRP in Nottinghamshire
Ben Hayes, Kent	Large and small units
Cath Haynes, Harcourt, and Marian Morris, NFER	RAPID
Eleanor Hick and Lynne Bold, Lancashire	Individual Literacy Support
Linda Hobbs, East Riding	Teaching Children Talking

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Dr Jane Hurry, Institute of Education, University of London	Extra information on Improving Spelling by Teaching Morphemes and on Reading Recovery in London and Surrey (latter also Prof. Morag Stuart, IoE)
Dr Dougal Hutchison, NFER	Statistical information
Sandra Hutton, Scotland	The Word Factory
Caroline Jennings	Corrective Reading
Joy Johnson, Rotherham	Reading Rescue
Dr Colin Lane	A.R.R.O.W.
Denise Lanes, Leicester	Read Write Inc. Fresh Start
Julie Lawes, Project Director, Catch Up Literacy	Catch Up Literacy in Barnsley, Hampshire, Norfolk and Powys
Viv Leather, Stockport	Every Child a Reader and SERI (Stockport Early Reading Intervention)
Prof. Ann Lewis, University of Birmingham	Use of ILS with children with literacy difficulties
Joanna Lockley and Tony Whatmuff, Leicester	Inference Training
Rosy McVittie via Graham and Jane Kendall	Five Minute Box, and MTSR in Southampton
Dr Martin Miles, University of Exeter	AcceleRead AcceleWrite in Devon
Vaughn Mudie, Isle of Wight	The Great 8
Maggie Noon, Newham	Newham Learning Support
Roger Norgate, Hampshire	SIDNEY
Roger Norgate, Hampshire, via Alan Davies, Director of THRASS	THRASS
Heather Osmond, York	LINK (Literacy Intervention Kit) and Talking Partners
Jo Padbury, Bedfordshire, via Dr Marlynne Grant, South Gloucestershire	Sound Discovery
Katy Parkinson, Middlesbrough	Sound Training for Reading
Isabell Pasternicki, Leicester	Big Writing
Linda Perry, Carole Price and Denise Kingston, East Sussex	Blitz!, Personalised Learning
Dr Mark Pilling, University of Sheffield	Some statistical analyses
Dr John Rack, Dyslexia Institute, York	SPELLIT
Dr Rea Reason, University of Manchester	Direct Phonics
Christa Rippon, Haringey	Read Write Inc., Reciprocal Teaching and Tracks Literacy
Dr Ian Schagen, NFER	Statistical information
Andrea Smart and Ian Enters, Yorkshire	Reading Matters for Life
Neil Smith and Joanna Lunt, Camden	Sound Waves
Prof. Margaret Snowling, University of York	Several recent studies in the York series

Dr Jonathan Solity, consultant (formerly University of Warwick)	The Early Reading Research, The Secondary Reading Research
Arthur and Judith Staples	Lexia
Christopher Staunton, Stoke on Trent	Daily Diary for Reading and Spelling (also known as Reading Focus)
Heather Swain, Cumbria	Reading Intervention
Keith Taylor	Toe by Toe
West Dunbartonshire County Council	Toe by Toe
Steve Williams, Derbyshire, and Steve Trickey and Prof. Keith Topping, University of Dundee	Philosophy for Children
Jacqui Worsley, Norfolk	Catch Up Literacy, Lexia and Sound Discovery

And finally and above all to the two members of the Steering Group: Diana Hatchett (the National Strategies at Capita) and Jean Gross (KPMG/Every Child a Reader), who provided me with lots of leads and copious information.

Greg Brooks, University of Sheffield, August 2007

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Chapter one

Focus and intention of this report

1.1 The focus

Most children learn to read and write satisfactorily first time through high-quality classroom teaching and/or home support, but what of those who don't? How are they to be helped? This research report reviews intervention schemes that have been devised to help struggling readers and writers, and is intended to inform schools' choices among such schemes.

More exactly, this research report is addressing the following questions:

- What intervention schemes are there which have been used in the UK in an attempt to boost the reading, spelling or overall writing attainment of lower-achieving pupils in at least one of Years 1–11, and which have been quantitatively evaluated here?
- What are those schemes like, and how effective are they?

The restriction to schemes used and evaluated in the UK is partly intended to avoid a deluge of information on schemes used elsewhere in the world, but mainly to circumvent the objection, 'How do we know that it will work here?'

The intention of this report is to provide clear and analytic information on such schemes available in order to inform practice and choices of approach. Those choices should be guided not only by the evidence assembled and analysed here, but also by careful matching of the needs of an individual school, class or child to the specifics of particular schemes.

Most of the schemes covered in this report are Wave 3 initiatives within the current structure of the Primary National Strategy's Framework for teaching literacy and the Secondary National Strategy's Framework for teaching English, as defined on the following page, though some are also in use as Wave 2 initiatives, and a few are preventive measures, aimed at preventing young children developing difficulties in the first place.

Within that structure, there is an obvious need for schools to have clear information, in order to make principled decisions about which approach to adopt for children who experience difficulties in literacy.

The Three Waves

Effective inclusive provision has been summarised in the National Strategies' Waves model which describes a strategic approach to teaching and additional intervention designed to minimise underachievement for all learners. The Waves model can be extended to incorporate additional challenge for all learners, including gifted and talented learners, and can be used as a strategic approach to developing the broader idea of personalisation.

Wave 1 – Quality first teaching

High-quality inclusive teaching is supported by effective whole-school policies and frameworks, clearly targeted at all learners' needs and prior learning. This teaching needs to be based in planning and schemes of work that are designed to move all learners from where they are to where they need to be. Where there are large numbers of learners who share the same learning needs, the best solution is to adjust the planning to cater for them. It means setting a new trajectory for the learning programme to take learners to where they need to be in terms of age-related expectations. Effective Wave 1 teaching anticipates the needs of learners based on good use of yearly transition data and information.

When applied to early reading, this means the provision of a rich language curriculum that fosters all four interdependent strands of language – speaking, listening, reading and writing – while providing access for all children to high-quality phonic work as part of quality-first teaching.

Wave 2 – Wave 1 plus additional, time-limited, tailored intervention support programmes

Wave 2 provision is designed to increase rates of progress and secure learning for groups of learners that puts them back on course to meet or exceed national expectations. This usually takes the form of a tight, structured programme of small-group support that has an evidence base of impact on progress. This support is carefully targeted according to analysis of need and is delivered by teachers or teaching assistants who have the skills to help learners achieve their learning objectives. The progress of learners is closely tracked for impact. This support can occur outside (but in addition to) whole-class lessons, or be built into mainstream lessons as part of guided work. Critically, intervention support needs to help children and young people apply their learning in mainstream lessons, and to ensure that motivation and progress in learning are sustained. The outcome of Wave 2 intervention is for learners to be back on track to meet or exceed national expectations at the end of the key stage.

Wave 3 – Wave 1 plus increasingly individualised programmes, based on independent evidence of what works

Expectations are to accelerate and maximise progress and to minimise performance gaps. This may involve support from a specialist teacher, highly-trained teaching assistant, or academic mentor delivered one-to-one or to small groups to support learners towards the achievement of very specific targets.

See also the note about schemes intermediate between Waves 2 and 3 in the entry on FFT Wave 3, section 3.11.

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1.2 The need

What proportion of children experience literacy difficulties? An estimate (for England only, since the DCSF remit is only for England) can be based on the results of National Curriculum assessments. Table 1 gives the percentages of children not yet achieving level 2 in reading at the end of Key Stage 1 (age 7), or not yet achieving level 3 in English at Key Stage 2 (age 11), in 1998–2006.

Table 1: Percentage of children in England achieving below level 2 in reading in Key Stage 1 National Curriculum tests, or below level 3 in English at Key Stage 2, 1998-2006*

Year	Key Stage 1 Percentage	Key Stage 2 Percentage
1998	19%	7%
1999	17%	7%
2000	16%	6%
2001	16%	7%
2002	15%	7%
2003	16%	7%
2004	15%	7%
2005	15%	6%
2006	16%	6%

* excluding absent pupils

This shows that significant numbers of children experience literacy difficulties and are likely to have difficulty in coping with the steadily increasing demands of the curriculum in Key Stage 3 (and beyond).

So what can be done for these children? I have identified a total of 48 schemes which fit my requirement of having quantitative evaluation data from the UK covering at least one year group and designed to boost reading and/or spelling and/or writing. Between them, these schemes have been the subject of at least the 121 studies which are analysed in the Appendix. The numbering system, however, runs up to 59 – this is because the 11 schemes which have both primary- and secondary-level data or data on both reading and/or spelling and writing get two entries each.

1.3 The schemes covered

The titles of the 48 schemes, and the shorter names by which some are mainly referred to in this report, are shown in Table 2. Several studies contained evaluations of more than one scheme, so in order to show the full coverage of the report, relevant schemes are shown with their alternative interventions (that is, the other approaches with which the main ones were compared) listed in italics below their full title. These alternative interventions bring the total of approaches evaluated up to about 66. In addition, many of the studies contained no-intervention (ordinary classroom teaching) control or comparison groups, and these are also analysed here: studies with a no-intervention control/comparison group are marked with an asterisk.

Table 2: Full and abbreviated names, and outline structure, of the 48 schemes

A.	Schemes for improving reading and/or spelling, primary level			
	1	A.R.R.O.W.	ARROW	
	2	Academy of Reading		
	3	AcceleRead AcceleWrite		
	4	* Better Reading Partnerships	BRP	
	5	* Catch Up Literacy *Matched Time*		
	6	* Cued Spelling		
	7	Direct Phonics		
	8	Early Literacy Support *Reading Intervention*	ELS	
	9	ENABLE		
	10	Family Literacy		
	11	FFT Wave 3		
	12	Five Minute Box		
	13	* Further Literacy Support	FLS	
	14	* Improving Spelling by Teaching Morphemes *Extra NLS spelling sessions*	Improving Spelling	
	15	* Individual Styles in Learning to Spell	Individual Spelling	
	16	Inference Training *Comprehension exercises* *Rapid decoding*		
	17	* Integrated Learning Systems	ILS	
	18	* Interactive Assessment and Teaching	IA&T	
	19	Lexia		
	20	Multi-Sensory Teaching System for Reading *Beat Dyslexia*	MTSR	
	21	* Paired Reading in Kirklees	Paired Reading	(1)
	22	* Parental Involvement in Haringey *Extra reading*	Parental Involvement	(2)
	23	Personalised Learning		
	24	Phono-Graphix™		
	25	Phonological Awareness Training	PAT	
	26	Phonology with Reading *Oral Language*		
	27	RAPID		
	28	Read Write Inc.		

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	29	* Reading Intervention (originally Cumbria Reading with Phonology Project – where this is meant it is called 'original') *Reading-only* *Phonology-only*		
	30	* Reading Recovery *Phonological Training*		(3)
	31	Reciprocal Teaching		
	32	* Reader's Intelligent Teaching Assistant *IA&T*	RITA	
	33	SIDNEY		
	34	* Somerset Self-esteem and Reading Project *Self-esteem counselling only* *Remedial phonics only* *Remedial reading only* *Drama plus DISTAR* *DISTAR only*	Somerset	(4)
	35	Sound Discovery		
	36	Sounds~Write *Progression in Phonics*		
	37	* SPELLIT *Home Support programme*		
	38	The Early Reading Research	TERR	
	39	THRASS		
	40	* Time for Reading		
	41	Toe by Toe		
B.	**Schemes for improving reading and/or spelling, secondary level**			
	42	Academy of Reading		
	43	Better Reading Partnerships	BRP	
	44	Catch Up Literacy		
	45	Corrective Reading		
	46	ENABLE PLUS (KS3)		
	47	* Integrated Learning Systems	ILS	
	48	* Literacy Acceleration		
	49	* Philosophy for Children		
	50	Read Write Inc. Fresh Start		
	51	Sound Training for Reading		
	52	The Accelerated Reader		
	53	* The Secondary Reading Research	TSRR	
	54	THRASS		
	55	Toe by Toe		

C.	Schemes for improving writing			
	56	Family Literacy		
	57	* Further Literacy Support	FLS	
	58	* Paired Writing		
	59	* Reading Recovery *Phonological Training*		(3)

Key to Table 2: * = scheme with no-intervention control/comparison group in at least one study – see Appendix and section 2.3

Approaches mentioned in italics under each main scheme are alternative interventions investigated within the same evaluation.

Notes to Table 2:

1. Topping and Lindsay (1992) reviewed dozens of Paired Reading schemes from all over the English-speaking world. For this report, the Kirklees scheme, which was not only based in England but also by far the biggest of those reviewed by Topping and Lindsay, has been taken as representative of all the findings, and is referred to simply as 'Paired Reading'.

2. Similarly, since there have been many Parental Involvement schemes, the original and best-known, Haringey, has been taken as the exemplar for this report.

3. Where Reading Recovery itself is meant, the title 'Reading Recovery' is used; but where it is necessary to refer to the comparison or alternative intervention conditions, the abbreviation RR is used instead; sometimes this abbreviation is also used to save space.

4. Somerset was a series of four studies; where necessary these are distinguished by a number in brackets, e.g. Somerset (1).

1.4 Forms of data

In order to judge whether an initiative has really made a difference, it is not enough just to ask the participants – they will almost always say it has. This feel-good factor is valid on its own terms, but doesn't always correlate with measured progress, and certainly doesn't convince policy-makers and funders. So quantitative data on the learners' progress are essential, measured by appropriate tests of (in this case) reading, spelling or writing.

But not just any test data will do: if the test provides only raw scores, the average gain may look impressive, but what does it mean? How good is it, compared with gains in other projects and/or with national norms? We need some way of comparing the impacts of different initiatives. The two forms of impact measure used in this report are ratio gains and effect sizes. These are explained in more detail in the early part of the Appendix; briefly,

- a ratio gain is a group's average gain in reading or spelling age in months divided by the time between pre- and post-test in months. A ratio gain can only be calculated where the test provides reading or spelling ages;
- an effect size is the experimental group's gain minus the comparison group's gain divided by (usually) the control/comparison group's post-test standard deviation. An effect size can be calculated whether the scores are reading/spelling ages, standardised scores, or even raw scores – there are examples of all of these in the Appendix. An effect size can even be calculated in the absence of a comparison or control group, provided that the test used yields standardised scores. In these circumstances the standardisation sample is treated as an implicit (unseen) control group and the standard deviation of the test is used (see, for example, Family Literacy (1) and (3) in the Appendix).

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Both forms of impact measure make it possible to put different initiatives on the same scale, despite their having used different tests, and therefore to compare their effectiveness. Unfortunately, ratio gains and effect sizes can't be translated into each other, so in Tables A6–14 in the Appendix you will find some that list ratio gains and others that list effect sizes. A very few evaluations provide the information to calculate both forms of impact measure, but so few that the two scales cannot be correlated.

There are, of course, other forms of data out there, and a word of explanation is needed on why they have not been used. Basically, it's because they don't allow different initiatives' impacts to be put on a common scale and compared. This is not to deny the usefulness of these forms of data for their own purposes. For example, all Reading Recovery schemes calculate and report 'the percentage of children successfully discontinued', and this enables Reading Recovery providers to see how closely they are matching up to the high targets they are set. But this measure cannot be used to provide external comparisons. This is also mainly true of another measure frequently reported now, namely, how far children have progressed up the Reading Recovery book levels. However, the Reading Recovery National Network has recently amassed enough data from the same children on both book levels and the British Ability Scales Word Reading Test that they can now offer translations of book levels into reading ages; this information has been used in just two cases, FFT Wave 3 and the 1997–98 cohort of Reading Recovery itself.

Similarly, some initiatives now report in terms of children's greater achievement at (say) Key Stage 1 than their teachers had predicted, and this is meaningful to providers within the system that operates in England. I have reported such data in six cases: FLS, Key Stage 2 reading and writing; RR, 1997–98 cohort, Key Stage 1 and Key Stage 2 reading; RR, ECaR in Britain and Ireland, Year 2 children in England, Key Stage 1 reading and writing. In the case of Further Literacy Support I have also reported Teacher Assessment data for comparison with test scores.

1.5 New features in 2007

The main innovation is the extension of coverage to secondary level, up to age 16. There are far fewer schemes for this age range than for primary level. However, I have found 14, and these are:

Academy of Reading	Philosophy for Children
Better Reading Partners	Read Write Inc. Fresh Start
Catch Up Literacy	Sound Training for Reading
Corrective Reading	The Accelerated Reader
ENABLE-PLUS (KS3)	The Secondary Reading Research
ILS	THRASS
Literacy Acceleration	Toe by Toe

These are all in section B of chapter three. All 14 have data for Key Stage 3, but only ILS has data for Year 11, and there are no data at all for Year 10.

Other new features are mainly in the Appendix, and include annotation and discussion of research designs, and systematic indication of whether schemes reported statistical significances of gains and/or a follow-up.

I hope that another new feature will prove particularly helpful: for every study in the Appendix, I discuss the pupils' starting and ending levels and the progress made. The terms used for this are listed at the end of the introductory section of the Appendix, immediately before the first entry (ARROW), and similar indications

are also given at relevant points in each main entry in chapter three and at the top of Tables A6–14 in the Appendix. This is intended to show more precisely what works for different groups and enable readers to assess which interventions provide the best match to the needs they have identified.

1.6 Changes in this edition

Between the publication of *What Works for Slow Readers*? (Brooks et al.,1998) and that of the previous edition of this report in 2002, the field had moved on considerably. A great deal of the information from the original 1998 report was retained, but some was not, and section 1.5 of the 2002 edition listed the schemes which were no longer included. Similarly, in this edition a great deal of the information from the previous edition, and even some from the original 1998 report, has been retained, though again some has been dropped, and a great deal more has been added. The only scheme which featured in the 2002 edition that has been dropped completely is Knowsley Reading Project, but some data on small studies or small comparison groups have also been dropped from Better Reading Partnerships, Cued Spelling, Paired Writing, Reciprocal Teaching and Sound Discovery.

Schemes solely or primarily focused on reading which have been added in this edition are the following (those marked with an asterisk also have spelling data – see below):

* A.R.R.O.W.	Philosophy for Children
Academy of Reading	Phonology with Reading
Corrective Reading	RAPID
Direct Phonics	* Read Write Inc.
* Early Literacy Support	SIDNEY
* ENABLE	* Sound Discovery
FFT Wave 3	Sound Training for Reading
Five Minute Box	* Sounds~Write
Further Literacy Support	The Accelerated Reader
* Lexia	* The Early Reading Research
* Literacy Acceleration	* The Secondary Reading Research
Personalised Learning	Toe By Toe

Detailed comparison of entries for reading in this and the 2002 edition will reveal that many impact measures which were previously attributed to accuracy are now attributed instead to comprehension – this is because it has become clear to me that many of the relevant tests (e.g. Salford, Suffolk), being sentence tests, are in fact tests of comprehension rather than accuracy.

Both previous editions had a separate section for ICT-based schemes. These are now merged into the reading and spelling sections.

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Schemes for spelling

The 1998 report was concerned solely with reading, and this still took up the bulk of the 2002 edition, and this is yet again the case. However, the 2002 edition was deliberately expanded to include spelling and writing more generally, and information was given on 12 schemes which provided data on spelling and two for writing. The ten new schemes which have spelling as well as reading data are indicated by an asterisk just above, and there is one new scheme concerned solely with spelling, Improving Spelling by Teaching Morphemes. The 12 schemes with spelling data retained from 2002 are:

AcceleRead AcceleWrite	Phono-Graphix™
Catch Up Literacy	Reader's Intelligent Teaching Assistant
Cued Spelling	Reading Intervention
Individual Styles in Learning to Spell	Reading Recovery
Interactive Assessment and Teaching	THRASS
Multi-sensory Teaching System for Reading	Time for Reading

All the schemes which focus on reading and/or spelling are in parts A and B of chapter three; those focused on primary level are in part A, and those focused on secondary level are in part B.

Schemes for writing

In 2002 the requirement to cover the general process of writing was difficult to fulfil, because much less quantitative research had been done on writing than on other aspects of literacy, and there was very little that stood up to analytic scrutiny. In 2002, the new section on schemes for improving writing consisted of just three small studies on the Paired Writing technique, plus some insights from Family Literacy. However, since then a very large and well-conducted study has been carried out evaluating Further Literacy Support, and there are very useful data from two Reading Recovery studies, the 1997–98 cohort and RR across Britain and Ireland; even so, more quantitative studies of how to improve writing are needed.

The way in which the information summarised in this report was analysed is described in the Appendix. The schemes are all described in chapter three, but first a guide through them is provided in chapter two.

Chapter two

Signposts

2.1 Finding your way

Literacy research is a jungle, and quantitative evaluations of interventions are among its densest thickets. This chapter is intended to help you find the schemes which may be most relevant to your situation. All the schemes mentioned are described in chapter three – but remember that these are only the schemes analysed for this report.

Before going on to the remainder of the chapter it would be advisable to read the caveat in the next section on the scale of the various evaluations.

When reading this chapter it is particularly important to remember that it mentions all schemes, whether effective or not; however, as a rough guide, schemes which the data suggest are less effective are shown in [square brackets].

2.2 Scale of the evaluations

When considering the interventions and what is said about them here, it would be well to bear in mind that the evaluations differed vastly in scale. To emphasise this, Table 3 shows the numbers of children involved. Where more than one project is covered by a heading, the various studies' numbers are summed.

The reason for the huge numbers for ILS is explained in its entry in the Appendix. Some schemes have been evaluated on a large scale, while the numbers against some well-known names in the list are comparatively small. But there is no simple correlation between size and quality here – some small studies (in terms of number of children in the experimental group) were meticulously designed and reported, while the reporting of some with much larger numbers was considerably less complete.

2.3 The impact of ordinary classroom teaching

As shown in Table 3, 22 of the 48 schemes provided evidence of well-defined control/comparison groups who received no extra intervention, in other words, ordinary classroom teaching. Several of the studies providing information on the impact of ordinary teaching were among the largest; indeed, the number of comparison-group children in the Year 11 part of the Durham study in ILS Phase III was claimed to be 37,000. With these children included, the total number of children in control/comparison groups is about 45,000; without them, about 8,000.

(Distinction between control and comparison groups: I use the term 'control group' only where pupils were assigned to the no-intervention group by random allocation, as in a randomised controlled trial (RCT). For the nine RCTs included in this report, see the Appendix. For no-intervention groups in all other studies, I use the term 'comparison group'.)

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Table 3: Numbers of children involved in the 48 studies, in decreasing order of number in experimental group

Ref(s)	Name of study	Numbers of children			
		Experimental groups	Comparison groups	Alternative Intervention(s)	Total
30, 59	Reading Recovery	5438	339	92	5869
17, 47	Integrated Learning Systems	3772*	39 861*		43 633*
4, 43	Better Reading Partnerships	2978?	142?		3120?
21	Paired Reading in Kirklees	2372	446		2818
5, 44	Catch Up Literacy	2090	60	60	2210
13, 57	Further Literacy Support	1054	2720		3774
10, 56	Family Literacy	515			515
29	Reading Intervention	459	31	61	551
28, 50	Read Write Inc.	446			446
27	RAPID	418	368		786
14	Improving Spelling	363	365	27	755
39, 54	THRASS	320			320
3	AcceleRead AcceleWrite	300			300
35	Sound Discovery	278			278
24	Phono-Graphix™	242			242
38	TERR	211	36		247
2, 42	Academy of Reading	186			186
20	MTSR	173		17	190
9, 46	ENABLE	165			165
34	Somerset	143	90	224	457
41, 55	Toe by Toe	112			112
18	IA&T	97	89		186
23	Personalised Learning	92			92
45	Corrective Reading	92			92
1	ARROW	91			91
31	Reciprocal Teaching	88			88
16	Inference Training	83		26	109
19	Lexia	79			79
32	RITA	74	103		177
6	Cued Spelling	72			72
26	Phonology with Reading	71		75	146
51	Sound Training for Reading	70	21		91
8	Early Literacy Support	69		59	128

40	Time for Reading	68	72		140
11	FFT Wave 3	67			67
33	SIDNEY	66			66
48	Literacy Acceleration	63	40		103
53	TSRR	62	62		124
22	Parental Involvement	51	152	45	248
37	SPELLIT	51	58	41	150
52	The Accelerated Reader	47			47
12	Five Minute Box	40			40
58	Paired Writing	39	39		78
15	Individual Spelling	26	22		48
25	PAT	24	24		48
7	Direct Phonics	24			24
36	Sounds~Write	24		27	51
49	Philosophy for Children	15	17		32

Key: ? = number not stated clearly or at all in a contributing report

* = numbers for Integrated Learning Systems are for numeracy as well as literacy; literacy numbers were not given separately

Note: Where no number is shown, there was no comparison or alternative intervention group.

As the Appendix shows, most control/comparison groups made normal progress. This finding is, however, circular: children receiving ordinary teaching mostly made the progress to be expected of children receiving ordinary teaching. What is more interesting is that some comparison groups made better than expected progress. In some cases, the explanation is both known and obvious: the control/comparison group was also receiving extra attention – see in particular RAPID. However, there are some control/comparison groups which made better than expected progress despite, apparently, receiving no extra intervention – see especially Paired Reading. What secret might this scheme have had? It seems that in Kirklees (the LEA where the Paired Reading study was conducted) the experimental intervention affected a significant proportion of schools.

So it may be that Paired Reading affected a high proportion of the schools in the area in which it took place, and the experimental schools were observed by others. This may have influenced non-participating schools to raise their game, and provide ordinary teaching of a higher effectiveness than usual. Density of implementation seems not to have been a feature of schemes where the comparison groups made normal progress, and it might be reasonable to conclude that this is more like the normal situation, and therefore that ordinary teaching provides extra impact only in exceptional circumstances.

On the other hand, if the density effect is real, it would support an argument for implementing initiatives at a fairly high density and/or with great publicity.

The evidence on ordinary teaching therefore proves the need for early intervention schemes: in general, ordinary teaching does not enable children with literacy difficulties to catch up.

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2.4 What works at secondary level?

There is much less evidence for secondary level than for primary; in particular, there is none at all for writing. That said, there is evidence of useful to remarkable effectiveness for reading for the following schemes: Academy of Reading, BRP, Corrective Reading, ENABLE PLUS (KS3), Literacy Acceleration, Read Write Inc. Fresh Start, THRASS and Toe by Toe; less convincing or mixed evidence for Catch Up Literacy, Philosophy for Children, The Accelerated Reader, Sound Training for Reading, and The Secondary Reading Research; and pretty convincing evidence of ineffectiveness for [ILS].

There are only four schemes with evidence for spelling at secondary level. Two have moderately convincing evidence of effectiveness: Literacy Acceleration and THRASS, while [Read Write Inc. Fresh Start] and [The Secondary Reading Research] seem relatively ineffective here.

While its effectiveness is not huge, [Philosophy for Children] nevertheless represents a wholly different angle from all the other schemes analysed; whatever benefit it might have for reading was an unexpected bonus effect.

Except where stated, the remaining sections of this chapter deal only with primary level.

2.5 Focusing on writing and spelling

There was only a handful of studies on the compositional aspect of writing at primary level: Family Literacy, Further Literacy Support, Paired Writing (two small studies) and two Reading Recovery studies (ECaR in London and RR across Britain and Ireland). However, the sample sizes in FLS and RR across Britain and Ireland, both added in this edition, were so large that they hugely increase the weight of evidence. Despite this, the approaches are too disparate to justify broad conclusions. Suffice to say that Paired Writing has definite potential and the others seem to have been effective.

Among schemes which provided data on spelling at primary level, there are just three, Cued Spelling, Improving Spelling and Individual Spelling, which were concerned exclusively with spelling. Cued Spelling and Individual Spelling and at least seven others, ARROW, ENABLE One-to-One, Lexia, Phono-Graphix™, Sound Discovery, Sounds~Write and [THRASS – less effective for spelling than for reading], paid explicit attention to phoneme-grapheme relationships. However, it is less obvious for spelling than for reading that embedding within a broad framework is crucial, since Phono-Graphix™, [THRASS] and Cued Spelling did this, but other schemes did not.

Two other schemes were highly effective for spelling: IA&T and RITA. What these seem to have in common with the other effective schemes for spelling is that they are highly structured.

Improving Spelling through Teaching Morphemes is the wild card here: its approach was almost entirely different from all the other schemes which focused on spelling, and it deserves to be developed.

For greatest impact with children who struggle with spelling, highly structured schemes work best.

2.6 Focusing on phonological skills for reading

Phonological skills, including spelling, were the focus of the largest number of studies. Among those analysed here, the following mainly phonological schemes focused on reading:

- Fourteen main schemes: ARROW, AcceleRead AcceleWrite, Direct Phonics, Lexia, Phono-Graphix™, [PAT], Phonology with Reading, Read Write Inc. (including Fresh Start), SIDNEY, Sound Discovery, Sounds~Write, Sound Training for Reading, THRASS and Toe by Toe;
- Six alternative interventions: [Phonology-only in Cumbria], [PiPs in the ELS study], Rapid decoding in Inference Training, [Phonological Training in the Reading Recovery in London and Surrey study], Phonics-only in Somerset (1) and DISTAR-only in Somerset (4).

Those shown in square brackets were relatively ineffective, while the rest were at least reasonably effective. Three generalisations seem warranted:

- the sheer number of phonologically-based schemes has increased substantially since 2002, when I logged just four. Most of the new schemes are quite recent, and presumably reflect the influence of the Rose Review and the wider renewed interest in phonics;
- the evidence on schemes which focused on phonological skills appears to show that they are mostly effective;
- moreover, a further generalisation can be drawn from the six schemes mentioned above which were alternative interventions within larger evaluations. In all of these except Somerset (1), the phonological scheme was substantially less effective than the main experimental approach; and the main approach was broader and incorporated work on phonological skills.

This description also fits Phono-Graphix™ and THRASS, which give explicit attention to grapheme-phoneme relationships within a broad framework, and were effective. All of this also chimes with the main finding of the systematic review carried out by Torgerson et al. (2006), namely, that systematic phonics

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teaching within a broad and rich language curriculum enables both normally-developing children and those at risk of failure to make better progress in reading accuracy (word identification) than unsystematic or no phonics teaching.

For greatest impact with struggling readers, therefore, work on phonological skills should be embedded within a broad approach.

2.7 Focusing on comprehension skills

Both previous versions of this report stated that 'Most aspects of reading improvement are under-researched in the UK, but this is the most under-researched of all'. Partly because of my reclassification of some tests as tests of comprehension rather than accuracy, but mainly because of the proliferation of studies, it can now be said that there is a satisfactory and growing body of evidence on how to boost primary-level children's comprehension. In the United States there was already a powerful meta-analysis of rigorously conducted randomised controlled trials (Rosenshine and Meister, 1994) which had found a satisfactory effect size in favour of working on comprehension, based on a range of instructional approaches. A similar conclusion was reached by the US National Reading Panel's sub-group (Ehri et al., 2001) on the basis of both randomised and other controlled trials involving phonics, but Torgerson et al.'s (2006) more rigorous systematic review found insufficient evidence to decide whether phonics benefits comprehension. However, the wider literature analysed here does suggest that a range of approaches have potential in this regard.

The two studies which addressed this issue most directly were Inference Training and Reciprocal Teaching. The original Inference Training study included only thirteen 'less skilled comprehenders' and thirteen 'skilled comprehenders', but had a detailed and tightly organised experimental design. The Inference Training which was designed specifically for the experiment was effective for less skilled comprehenders, and more so than for skilled comprehenders. However, extra comprehension exercises were equally effective. The more recent study in Leicester backs up the usefulness of this approach for boosting comprehension.

Reciprocal Teaching was larger – eighty-eight children, but with no comparison group. However, its result was very clear – a useful impact on reading accuracy and a substantial one on comprehension.

There are now many other schemes which had substantial impacts on comprehension – see Tables A6–7 in the Appendix.

From the evidence now available it can definitely be deduced that children's comprehension skills can be boosted by suitable teaching.

2.8 Focusing on self-esteem

A series of four studies on this topic was carried out from 1970 to 1984 in Somerset – see pages 43–46. The results can be summarised as follows.

Self-esteem counselling by a professional educational psychologist was effective in raising reading attainment. But since this was too expensive an approach for general use, the researcher then trained non-professionals to deliver self-esteem counselling. When used alone, this was not effective, but when combined with a specific reading intervention it was very effective. And in the final study drama teaching designed to boost self-esteem plus a specific reading intervention was also very effective – and could be seen as even more cost-efficient.

Very little further work has been done in this tradition – for the very little that was found, see the entry for Somerset, section 3.34.

Even though no further comparable studies seem to have been done for over 20 years, working on self-esteem and reading in parallel would seem to have definite potential.

2.9 Focusing on ICT

In the 2002 edition there were only three schemes which used ICT as their main resource (AcceleRead AcceleWrite, [ILS], RITA). To these must now be added Academy of Reading, ARROW, Lexia and The Accelerated Reader. The results from the new studies reinforce those stated in previous editions.

RITA did produce significant progress, but no more than the non-computer-based intervention to which it was compared, IA&T – hardly the result that advocates of the technology expect.

The main result of [ILS] was that its impact on reading was non-significant. The children in the experiments did make some progress, but no more than would be expected from normal schooling. And in one primary school where an Integrated Learning System had been targeted at children with SEN, the children in the project made significantly less progress than the comparison group (see NCET, 1996, pp. 19 and viii, school U). Even more generally, Ann Lewis's (1999) review of using ILS with children with low attainments in reading concluded that its effectiveness had not been demonstrated.

However, there were contrary findings. Four studies of AcceleRead AcceleWrite showed significant gains. What is striking about the approach is how precisely targeted it is. Children read and reread a sentence from a card until they can type it into the (talking) computer from memory with high accuracy. Thus, the approach stresses the accuracy of both reading and spelling. ARROW and Lexia produced good gains, and are also very targeted schemes. (The Accelerated Reader is a secondary scheme, and quite different – see section 3.52.)

And within the generally non-significant results from [ILS], there was one school (see NCET, 1996, pp. 19, 29 and ii, school A) where project pupils made three times as much progress in six months as the comparison group. It is worth quoting at length the researchers' description of how this was achieved (op. cit., p. 29):

> The teachers ... found that pupils had completed Initial Reading without having mastered the comprehension strands. In some cases pupils had avoided comprehension completely but were still able to finish the module. Teachers decided to re-enrol pupils on Initial Reading, switching on only the comprehension strands and increasing their support of pupils. Pupils then moved on... better prepared to cope with the comprehension level demanded of them.

Thus, where the technology was used with precision and backed up by teachers, gains were made. In other circumstances, pupils were left to find their own routes and targets. This left them at risk of what Hurry (1996, p. 26) has called 'the butterfly approach or the smorgasbord approach', either flitting unproductively from one item to another, or trying to digest too much all at once.

Given the financial investment that all ICT approaches require, technology used to boost literacy attainment deserves to be targeted as precisely as possible.

2.10 Large-scale programmes

Seven of the primary schemes covered here merit this description: ELS, Family Literacy, FLS, Phono-Graphix™, Reading Intervention, Reading Recovery, and The Early Reading Research. All were effective, but all are relatively expensive, since they require considerable training for teachers, and either a good deal of individual tuition for children or recruitment of parents also onto the courses. But since US evidence suggests that every dollar spent on early intervention saves $7 on social remediation later (Schweinhart et al., 1993), and British evidence (KPMG Foundation, 2006) that every pound spent saves between £15–£18, such schemes may well be good value.

Wright (1992) contrasted the one-off cost of Reading Recovery (then) in Surrey of £600 with the £15,000–£25,000 needed for a Statement of Special Educational Needs and resulting support over many years. Similarly, Hurry and Sylva (1998) suggested that, although Reading Recovery is expensive at the point of

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delivery, averaged out over a five-year period the cost of support for Reading Recovery children was only 10% more than the cost of learning support which schools normally provide, as calculated for the comparison schools in the London and Surrey evaluation. Brooks et al. (1996) calculated the cost of each participant learning hour in the Basic Skills Agency's Family Literacy Demonstration Programmes as £3.47 (1996 prices), and judged this to be good value.

Large-scale schemes, though expensive, can give good value for money.

2.11 Partnership approaches for reading

Where resources do not permit such large-scale schemes, partnership approaches may be effective. I have given the general label 'partnership' to schemes in which children who are poorer readers are tutored one-to-one, or in small groups, by better readers of the same age, or by older children, or by adult volunteers, or (in some cases) by their teachers.

The best-known partnership approach is Paired Reading, and the effectiveness of this approach has been fully demonstrated. Its siblings, Cued Spelling and Paired Writing, are much less researched to date but seem promising, and operate on the same principle. Anyone interested in following up these schemes is recommended to contact the Paired Learning Centre at the University of Dundee: www.dundee.ac.uk/psychology/TRWresources

Catch Up Literacy is perhaps the most precisely designed of the partnership schemes. Originally it was targeted specifically at children who achieve level 1 in reading at the end of Key Stage 1 – see chapter 1 of this report for the evidence that about a sixth or a fifth of children achieve below level 2 – and very practically designed to be delivered by Year 3 teachers in a few minutes per child per week. Though it is increasingly being adapted for and used with other age-groups there is a lot of evidence for its effectiveness.

Other schemes of this general type whose evaluations have demonstrated their effectiveness are Better Reading Partnerships, and Parental Involvement.

All effective partnership schemes rely on providing poorer readers with substantially increased time for reading, supported by a sympathetic, more skilled reader who has received structured training for the purpose, and who receives ongoing support. In order to ensure that the increased time on task is effective, focused training for the tutors is essential, so that they know what to do when a reader falters or makes an error. As Bentley and Reid (1995, p. 21) put it: 'Hearing children read is not teaching them to read'.

A tendency that is apparent in many of the schemes added in this edition is that several are or can be delivered by trained teaching or learning support assistants: ELS, ENABLE, FFT Wave 3, Five Minute Box, FLS, Personalised Learning, RAPID, Read Write Inc., SIDNEY, The Secondary Reading Research, recent versions of Catch Up Literacy, and several recent studies in the York series – see under Reading Intervention, section 3.29. This may well be a cost-effective way of delivering schemes, since the personnel are, in principle, already in place and being paid.

Where resources are limited, and partners are available and can be given appropriate training and ongoing support, reading partnership approaches deserve close consideration.

2.12 How can those with the greatest difficulties be helped?

Most of the schemes analysed here worked well for many children with what might be called 'moderate' literacy difficulties. However, there are several indications in the reading data that a number of schemes worked less well for children with more severe difficulties:

- The local adviser in Worcestershire stated that Better Reading Partnerships were not working there for children who were non-readers when the intervention began;
- In the special school in [ILS, School U], intervention produced a negative result, since the children in the comparison group outperformed those in the experimental group;
- More generally, Ann Lewis's (1999) review of the literature on using ILS with children with low attainments in reading (see the end of section 3.17) showed that no benefits from the technology could yet be proved;
- In the follow-up Reading Intervention study of children with moderate learning difficulties or dyslexia, these groups were not benefited relative to comparison groups receiving no intervention;
- In the further Reading Intervention study of children given extra phonics over and above RI most of those in the bottom third on pre-test scores did benefit, but even so some did not, and a further intervention provided solely for them did not seem to help.

On the other hand, Phono-Graphix™ in Surrey did work well for children with severe difficulties; and in Reading Recovery in London and Surrey, unlike the rest of the experimental group, children who were non-readers at the start maintained their gains right through to the three-year follow-up. No obvious reason for this discrepancy is apparent, but the ongoing research programme at York may reveal one.

Therefore, success with some children with the most severe problems is elusive, and this reinforces the need for skilled, intensive, one-to-one intervention for these children.

2.13 Duration and impact

Do shorter interventions produce bigger gains, or do gains continue to mount up during longer interventions? There is a dual problem of publication bias here: non-significant results are much less likely to be published, except in the case of longer-term interventions, which are likely to be more expensively funded and therefore to be under more pressure to publish, whatever the results. That said, in the 2002 edition it seemed clear that there were very few moderate-to-weak impact measures (ratio gain less than 2.0, effect size less than 0.50) for interventions running for a term or less (4–13 weeks), and more for longer-term interventions. This distinction is no longer so clear-cut, as many of the new longer interventions have at least a reasonably significant impact.

Interventions longer than one term may produce greater benefits but the further gains need to be carefully monitored.

2.14 Immediate benefits: satisfactory versus good

Both the 1998 report and the 2002 edition used the rule of thumb that ratio gains of 1.4 or more and effect sizes of 0.25 or more represent gains that are definitely more than standard progress, and therefore educationally significant. In this edition further distinctions have been drawn among interventions with an RG of more than 2.0 or an effect size of more than 0.50. This is because many schemes now produce impacts of this order or more – see Tables A6–14 in the Appendix.

Good impact – sufficient to at least double the standard rate of progress – can therefore be achieved, and it is reasonable to expect it.

2.15 Lasting benefits

Finally, do children sustain the improvements they make in intervention experiments, or do the gains tend to 'wash out' afterwards? Even though quantitative evaluations of the sort analysed here are now more frequent, studies in which the participating children are followed up after the intervention are still quite rare.

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However, 21 of the 121 studies covered in this report did follow up children at least once. The details are summarised at the end of the Appendix, and may be condensed by saying that:

- in eight cases the children at least maintained the improvements, and
- in nine cases the children made a further relative gain, but
- in four cases the gains partly or wholly washed out.

No generalisations seemed reasonable about when gains might wash out or not, but the general picture is positive.

2.16 Conclusions

- Ordinary teaching ('no intervention') does not enable children with literacy difficulties to catch up.

  Implication: Although good classroom teaching is the bedrock of effective practice, most research suggests that children falling behind their peers need more help than the classroom normally provides. This help requires coordinated effort and training.

- Schemes for secondary-age children are few, but several work well for reading.

  Implication: Provided they receive continuing support, children who make these gains should be better able to cope with the secondary curriculum.

- Schemes for children who struggle with spelling work best when highly structured.

  Implication: Children with spelling problems need schemes tailored to their preferred ways of learning and delivered systematically 'little and often'. Such schemes work particularly well for enabling children to grasp relatively regular patterns of spelling.

- Work on phonological skills for reading should be embedded within a broad approach.

  Implication: Phonic teaching should normally be accompanied by graphic representation and reading for meaning so that irregular as well as regular patterns can be grasped. Children with severe difficulties in phonological skills or using English as an additional language may need more 'stand alone' phonics teaching to support their speaking and listening.

- Children's comprehension skills can be improved if directly targeted.

  Implication: Engaging the child in exploring meaning embeds the relevance of reading for life, expands vocabulary and broadens the range of texts. Children falling behind their peers need both carefully structured reading material and rich, exciting texts.

- Working on children's self-esteem and reading in parallel has definite potential.

  Implication: Building strong and trusting relationships between teacher and child is an essential prerequisite for accelerating learning. Schools need to provide a coherent network, using multi-agency support.

- ICT approaches work best when they are precisely targeted.

  Implication: The mediation of a skilled adult is essential to ensure technologically-driven schemes meet children's needs. Time needs to be allocated effectively so that the diagnostic tools of programmes can be used for each child appropriately.

- Large-scale schemes, though expensive, can give good value for money.

  Implication: When establishing value for money, long-term impact and savings in future budgets for special needs must be considered, particularly when helping the lowest-attaining children.

- Where reading partners are available and can be given appropriate training and support, partnership approaches can be very effective.

  Implication: Reading partners need skilled training and support to maximise impact. A school needs to manage partners so that feedback to classroom teachers is effectively and regularly given. Teaching and learning support assistants are well equipped to undertake this role.

- Success with some children with the most severe problems is elusive, and this reinforces the need for skilled, intensive, one-to-one intervention for these children.

  Implication: The greater the problem, the more skilled the teacher needs to be. Children with special educational needs normally benefit from a highly-trained teacher working through an intensive and wide-ranging scheme using powerful ongoing diagnosis based on close observation.

- Interventions longer than one term may produce proportionally further benefits but the gains need to be carefully monitored.

  Implication: If a scheme is not providing the required acceleration for a child, it is counter-productive to provide more of the same. Schools need to analyse the needs of individual children carefully and then match needs with the most appropriate intervention.

- Good impact – sufficient to at least double the standard rate of progress – can be achieved, and it is reasonable to expect it.

  Implication: If the scheme matches the child's needs, teachers and children should expect to achieve rapid improvement. High expectations are realistic expectations in most cases.

- Most of the schemes which incorporated follow-up studies showed that the children maintained their gains or even made further gains.

  Implication: Classroom teachers need to be aware of the progress of children in intervention schemes and raise their expectations in line with that progress. Effective schemes give lasting benefit if normal teaching capitalises on them.

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Chapter three

The schemes and their evaluations

This chapter describes the 48 schemes, in three sections:

- schemes targeting reading and/or spelling at primary level;
- schemes targeting reading and/or spelling at secondary level;
- the few studies of any intensity which have investigated how to improve writing all at primary level (there were none at secondary level).

In both previous editions schemes which involve the use of ICT had their own section. Because of the increasing use of computer-based resources within otherwise paper-based schemes, schemes using ICT are now integrated into the reading and spelling sections.

Within each section the schemes are dealt with in alphabetical order. Each description contains an outline of the scheme itself, followed by a few details of its evaluation and results, and references. Where the report which is referenced may be difficult to obtain (for example, if it is an unpublished mimeograph), a contact address is usually given. First, some general characteristics of the 48 schemes are summarised in Tables 4 (primary) and 5 (secondary) on the next two pages.

Table 4: General characteristics of the primary schemes

Ref no.	Programme		Y1	Y2	Y3	Y4	Y5	Y6	Duration (weeks)	Number of sessions for each child in experimental group	Taught By
1	A.R.R.O.W.		✔	✔	✔	✔	✔	✔	1½	60 mins/day	computer & supervising adult, 1-1
2	Academy of Reading				✔	✔	✔	✔	20	variable	computer & supervising adult, 1-1
3	AcceleRead AcceleWrite			✔	✔	✔	✔	✔	4, 8	20 mins daily	computer & supervising adult, 1-1
4	Better Reading Partnerships		✔	✔	✔	✔	✔	✔	10–17	2 or 3 x 15 mins a week	other adults, 1-1
5	Catch Up Literacy			✔	✔	✔	✔	✔	12–44	10 mins a week indiv. + 15 mins/week group	teacher or TA, 1-1
6	Cued Spelling			✔	✔	✔	✔	✔	6–8	3 x 15 mins a week	parents, other pupils, 1-1
7	Direct Phonics		✔						12	?	teacher or TA, 1-1
8	ELS		✔						12	20 mins/day	TA, group
9	ENABLE	1-1		✔					8	5 x 30 mins/week	TA/LSA/other adults, 1-1
		Plus			✔	✔	✔		22	2 x 30 mins group + 1 x 10 mins indiv./week	TA/LSA, group & 1-1
10, 56	Family Literacy		✔ **N R**	✔		✔			12	8 hours a week	other adults, group
11	FFT Wave 3		✔	✔	✔				10	15–20 mins/day	TA, 1-1
12	Five Minute Box		✔	✔	✔	✔			28	5 (?) mins/day	LSA, 1-1
13, 57	FLS						✔		12	3 x 20–30 mins/week	TA, group
14	Improving Spelling by Teaching Morphemes				✔	✔	✔	✔	7, 13	variable, within class teaching	teachers, group
15	Individual Styles in Learning to Spell			✔	✔				26, 22	5 words daily	teacher, 1-1
16	Inference Training				✔		✔	✔	4, 6	2 x 20–45 mins a week	other adults, group
17	Integrated Learning Systems			✔	✔	✔	✔	✔	(26?), 52	variable	computer & supervising adult, 1-1
18	Interactive Assess-ment & Teaching			✔	✔				10	variable	teachers, group
19	Lexia			✔	✔	✔	✔	✔	10	2 or 3 x 20 mins/week	computer & supervising adult, 1-1
20	Multi-sensory Teaching System for Reading			✔	✔	✔	✔	✔	8, 26, 34	variable	teacher, group
21	Paired Reading		✔	✔	✔	✔	✔	✔	9	variable	other adults/ pupils, 1-1
22	Parental Involvement			✔	✔				52	variable	parents, 1-1
23	Personalised Learning		✔		✔				12	15 mins/day	TA, 1-1
24	Phono-Graphix™		✔	✔	✔	✔	✔	✔	12–26	12 x 1 hour sessions 3 x 20 minute follow-up for each 1 hour session	teachers & other adults, 1-1
25	PAT					✔	✔	✔	20	10 mins daily	teachers, 1-1
26	Phonology with Reading		**R**						20	daily	TA, group & 1-1
27	RAPID				✔	✔	✔	✔	10	2 sessions/week, variable length	teacher/TA, 1-1
28	Read Write Inc.			✔	✔	✔	✔	✔	8, 12, 20	60 mins/day	TA, group
29	Reading Intervention			✔	✔	✔	✔	✔	25	2 x 30 mins a week	teacher or TA, group and 1-1
30, 59	Reading Recovery		✔	✔					12–20	30 mins daily	teachers, 1-1
31	Reciprocal Teaching				✔	✔	✔	✔	16–52	20 sessions	teachers, group
32	Reader's Intelligent Teaching Assistant			✔	✔				17	variable	computer & supervising adult, 1-1
33	SIDNEY		✔	✔					12	15 mins/day	LSA, 1-1

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Table 4: continued

Ref no.	Programme		Y1	Y2	Y3	Y4	Y5	Y6	Duration (weeks)	Number of sessions for each child in experimental group	Taught by
34	Somerset self-esteem and reading	(1)				✔			26	20 mins week/indiv. + 30 mins a week/group	other adults, group/1-1
		(2)				✔			18	30 mins a week/indiv. + remedial	
		(3)			✔	✔			17	30 mins a week/indiv. + remedial	
		(4)			✔	✔			20	45 mins a week/pair + 3 x I hr a week group	
35	Sound Discovery			✔	✔	✔	✔	✔	10–22	3 sessions/week, variable length	teachers, group
36	Sounds~Write		✔						5	variable, within class teaching	teachers, group
37	SPELLIT			✔	✔	✔			30	37 hours total	teachers, group
38	The Early Reading Research		✔		✔	✔	✔	✔	15, 70	3 x 15 mins/day	teacher or TA, group
39	THRASS			✔	✔		✔	✔	26, 13	30 mins daily	teachers, group
40	Time for Reading		**R**						26	variable	volunteers, 1-1
41	Toe by Toe		✔	✔	✔	✔	✔	✔	74	60 mins/day	volunteers, 1-1
58	Paired Writing				✔			✔	8, 6	variable	other pupils, 1-1

Key: N = Nursery, R = Reception
Note: The year groups shown are those within Years 1–6 for which the scheme has been evaluated and analysed for this report. There are also some entries for Nursery and Reception.

Table 5: General characteristics of the secondary schemes

Ref no.	Programme		Y7	Y8	Y9	Y11	Duration (weeks)	Number of sessions for each child in experimental group	Taught by
42	Academy of Reading		✔	✔			20	variable	computer & supervising adult, 1-1
43	Better Reading Partnerships		✔	✔			11	2 or 3 x 15 mins a week	other adults, 1-1
44	Catch Up Literacy		✔	✔			39	10 mins a week indiv. + 15 mins/week group	teacher or TA, 1-1
45	Corrective Reading		✔				17	3 x 30 mins/week	teacher/TA, group
46	ENABLE PLUS (KS3)		✔	✔	✔		10–14	2 x 30 mins group + 1 x 10 mins indiv./week	TA/LSA, group & 1-1
47	Integrated Learning Systems			✔	✔	✔	?	variable	computer & supervising adult, 1-1
48	Literacy Acceleration	(1)	✔	✔			60	5 x 20 mins alone + 5 x 10(?) mins with adult/week	teachers, other adults, 1-1
		(2, 3)	✔				30		
49	Philosophy for Children		✔				34	27 hours over 8 months	teacher, group
50	Read Write Inc. Fresh Start	(1)	✔	✔	✔		24	60 mins/day	TA, group
		(2)	✔				34		
		(3)	✔				6		
51	Sound Training for Reading				✔		6	6 x 60 mins/week	teacher, group
52	The Accelerated Reader		✔				26	60 mins/day	computer & supervising adult, 1-1
53	The Secondary Reading Research		✔				36	3 x 15 mins/day	TA, group
54	THRASS		✔	✔			13	30 mins daily	teachers, group
55	Toe by Toe		✔				26	60 mins/day	other adults, 1-1

Note: The year groups shown are those within Years 7–9 and 11 (no schemes were found which operated at Year 10) for which the scheme has been evaluated and analysed for this report.

A. Reading and spelling schemes – primary level

3.1 A.R.R.O.W.

The full title is Aural – Read – Respond – Oral – Write.

Scheme

Colin Lane has for many years been refining his theory that hearing one's own voice is a psychological key to much language comprehension and performance, that the cause of some children's difficulty in learning to read and spell is having an indistinct or unattended 'self voice', and that being able to record and play back their own voices can help some children make good progress. His system nowadays uses laptop computers with headphones to provide examples and exercises, and monitor children's progress through his many-layered program. Children work individually with a laptop. The program displays a piece of text at an appropriate level, anywhere from a single letter to a short paragraph. The child hears it spoken, then repeats it aloud and records it, then plays it back – repeating this process as often as wished until the result is satisfactory to the child. Each mini-exercise ends with the requirement that the child writes down the piece of text. Nominally, each child should receive the program for one hour a day for ten consecutive school days. One teacher or teaching assistant can supervise as many children as the school has laptops for. The scheme is particularly appropriate for children with reading or spelling problems, but has also been used as an across-the-board Wave 1 programme.

Evaluation

Colin Lane provided data on one study showing remarkable benefits for both reading and spelling.

Reference

Unpublished data supplied by Colin Lane

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3.2 Academy of Reading®

Scheme

The AutoSkill Academy of Reading® is a computer-based reading intervention programme that is designed to give pupils the basic reading skills they need to form a foundation of reading success.

The programme was developed by Canadian neuropsychologists who were interested in how ICT can help pupils with dyslexia achieve better fluency in their reading ability. The programme has since evolved to become a tool to help teachers improve reading fluency for pupils in the mainstream classrooms of primary schools, in secondary schools for pupils who are reading-delayed or have Special Educational Needs, or for supporting pupils learning English as an Additional Language.

The programme activities include:

- Pupil training in phonemic awareness
- Pupil training in sound-symbol association
- Pupil training in phonics and decoding, including:
  - visual-visual matching exercises
  - auditory-visual matching exercises
  - oral reading practice (optional)
- Pupil training and assessment in comprehension, including:
  - silent reading comprehension
  - oral reading comprehension (optional)
- Pupil reading practice
- Additional assessment capabilities for benchmarking pupils' reading levels

Teachers are able to draw from these elements in either a system-prescribed approach that develops an Individual Education Plan for each student based on their performance on an assessment, or alternatively through any customised selection of activities to complement their classroom requirements.

Evaluation

One very useful set of UK data was found, from a pilot study in five Education and Library Board areas in Northern Ireland carried out in 2003–04. The data were gathered by teachers in the schools and analysed by researchers at AutoSkill in Ottawa. Modest or useful gains were found for comprehension across Northern Ireland Years 4–7 (= England and Wales Years 3–6).

Reference

Loh and Stanton (2004)

Contact

www.autoskill.co.uk/

3.3 AcceleRead AcceleWrite

Martin Miles in Devon and Vivienne Clifford in Harrow developed a scheme they called 'The Talking Computer Project' in 1992, trialled it in Somerset, and named the published version AcceleRead AcceleWrite. The original target group was children with dyslexic-type difficulties, but the programme is now used with children with other forms of literacy difficulty. Most of the data analysed in this report come from Key Stage 2, but it has been used in all school years from Year 1 to Year 11. Four sets of evaluation data have become available.

(1) Jersey

In 1993, the education authority in Jersey read about the success of 'The Talking Computer Project', and realised that it would be possible to replicate the study at little cost. Jersey schools already had the appropriate computers along with a good relationship with the software publisher. The level of computer literacy among Jersey teachers meant that the training to use the computer element of the programme was readily achievable. The programme has since been used by many other authorities.

Scheme

Seventy-one pupils with reading difficulties from 15 primary schools and four secondary schools took part (but because separate data were not given for the various year groups, this scheme has been listed only under primary). Each school supplied a project coordinator. Courses were run to train the learning assistants involved in how to use the computer software and the process of delivering the reading material.

The learning assistants worked with an individual child for twenty minutes a day over a four-week period. The child was presented with a card containing four sentences. Each card contained a particular phonic pattern or number of patterns. The child was allowed to read the card until confident of memorising it. The card was then placed face down and the pupil had to say the sentence to the adult, then type it into the computer. The computer said each word as it was entered, giving audio feedback on misspelt words. It also read the complete sentence once the full stop had been typed. Mistakes were rectified by the child until the sentence was completed correctly.

Evaluation

The Jersey evaluation was carried out by Mel Goodyear, Jersey Advisory Service, who coordinated the project, assisted by Martin Miles. The pupils were tested for reading, spelling and recall of digits using subtests of the British Ability Scales. Questionnaires about the pupils' levels of motivation and ability in reading, comprehension, spelling, creative writing, speaking and listening were completed by teachers both before and after delivery of the reading programme. A questionnaire aiming to evaluate the feeling of the supervising adults about the overall effectiveness of the scheme was also completed.

Results were available from 61 children in the experimental group (and from nine children in a comparison group – but this was too small for the results to be analysed). The children using the programme made substantial gains. It was noted that pupils' motivation was high and they were relaxed. There were noticeable improvements in computer skills and confidence. An improved awareness of letter patterns, fluency in reading, employment of letter strategies and independence in their writing were reported. During the same period positive changes in pupil behaviour (which was not the prime focus of the project) were also reported.

References

Clifford and Miles (1993, 1994), Jersey Advisory Service (1993), Miles (1994)

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or

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and

Iansyst Ltd (publisher of Acceleread Accelewrite, 2nd edn, 2004) at
www.dyslexic.com/acceleread
or 01223 420 101

(2) Devon

Later, Martin Miles used the programme in a primary school in Devon with 30 mostly older Key Stage 2 children who had been identified as experiencing difficulties with reading and/or spelling. Remarkable gains were made.

Reference

Unpublished data supplied by Martin Miles

(3) Bristol

More recently, the programme has been used in thirteen primary schools in Bristol with sixty children with SEN. Useful gains were made.

References

www.bristol-cyps.org.uk/teaching/sen/pdf/sen_wave3_report.pdf
and unpublished data supplied by Sue Derrington

(4) Wiltshire

Most recently, the programme has been used in various primary schools in Wiltshire with 149 children with literacy difficulties. Again, remarkable gains were made.

Reference

Unpublished data supplied by Sarah Couzens via Martin Miles

3.4 Better Reading Partnerships

The Better Reading Partnership, developed originally in Bradford but no longer in use there as a Wave 3 intervention, aimed to help children to become better readers by providing explicit training for adults helping them. The 15-minute sessions, which occurred three times a week, followed a common structure and focused on the development of independent reading strategies.

(1) Bradford

Scheme

In Bradford LA the Better Reading Partnership developed out of the realisation that those experiencing difficulties in reading were not finding current strategies of simplifying text very helpful. Such approaches were found to result in poor-quality learning and a heavy dependence on the teacher.

The national charity Volunteer Reading Help was a vital component in this partnership. They recruited adults from existing curriculum support staff and parent volunteers already helping in the school. The two-day training course included a direct observation using a one-way viewing facility. The ongoing training was supported by a project coordinator who met with the partners to discuss the development and progress pupils were making and consider new aspects of the reading process. By 1997 the partners had already worked with 1,649 children.

The partners worked with the pupils for ten weeks. They read together for 15 minutes, three times a week. Each reading session followed a common structure of rereading a known and familiar text, rereading a book recently taken home, and introducing a new text. The focus was on the development of independent learning strategies. The reading partners were encouraged to discuss the text with the pupil, and were trained to prompt the pupil to problem-solve difficulties and to develop reading behaviours that would have maximum pay-off.

Evaluation

Bradford LA carried out its own evaluation. The Suffolk reading test was used to monitor the effectiveness of the programme for the cohort of pupils who took part in 1995–96. They made useful gains in the 10-week period.

Reference

Collins (1996)

(2) Derbyshire

The ROWA! (Read On – Write Away!) initiative in Derbyshire took up BRP from Bradford under the name Better Reading Partners as one of its schemes in 1998 – it was adapted by two educational psychologists. By July 2002 they had trained just over 2000 partners, of whom half were volunteers, the rest being teaching assistants etc., and over 8000 children had been partnered.

Evaluation

ROWA! has carried out its own evaluation every year. The clearest data provided, covering poor readers in Years 1–6, were for 683 children in the school year 1998–99, when most of the partners were teaching assistants, and this is what is analysed in the Appendix. Average gains were substantial in each year group.

Reference

Taylor (2000)

Contact

Read On – Write Away!
County Hall
Matlock
Derbyshire DE4 3AG

www.rowa.co.uk

(3) Durham

In Durham LA the Better Reading Partnership aimed to improve the skills of average and below-average readers, enabling them to become more successful in their independent reading.

Adults working on the programme received two days' training and two follow-up interviews with the literacy consultant in charge of the programme to discuss their sessions and their tutees' progress. Adult partners could be teachers, learning support staff, teaching assistants, ancillary staff such as caretakers and cooks, parents, grandparents, community workers, governors and friends of the school.

As in the Bradford model, which was followed with only slight variation, the partners worked with the pupils for ten weeks. They read together for 15 minutes, three times a week. Pupils' reading included a variety of fiction, non-fiction and poetry texts, and was drawn from reading schemes as well as off-scheme books and magazines and newspapers for older pupils.

Evaluation

The LA collected its own monitoring data, and the impact was substantial, especially in Key Stage 1. In Years 1–2 the children reached reading ages above chronological age, and sustained their gains over the next year. The Year 3–5 pupils made useful gains during the project and just about standard progress in the following 12 months.

Reference

Unpublished data supplied by Ann Foster

(4) Redcar and Cleveland

Very few details were available on this.

Evaluation

However, the LA had collated data on over 1,000 pupils, and the impact was substantial.

Reference

Unpublished data supplied by Andrew Taylor

(5) Worcestershire

Worcestershire began using BRP in 1999 as the approach adopted for an Innovative Development Project (IDP) funded by the Basic Skills Agency. Modifications to the Bradford model were that the partners were parents, and they were asked to read two books at each session (not three), and they read with children twice a week for 15–20 minutes. One book was familiar, and the second was new, and the new text from each session became the familiar book for the next. In 2000–02, the LA trained many parents, and about 60 achieved accreditation for this work. About 25 schools were using the scheme in 2002; in addition ten schools in an Education Action Zone were using it with teaching assistants.

Evaluation

The 1999–2000 IDP was evaluated by two researchers from the National Foundation for Educational Research. The gains were generally modest, and the LA adviser commented (Anthea Main, personal communication, 29 September 2002) that 'There were gains across all year groups as long as the children had started reading – it is not successful with non-readers'.

Because the evaluation used a cross-over design, the phase 2 data from the first group to receive the intervention were effectively follow-up data. The phase 2 data from that group showed that that group continued to make approximately standard progress. They were not making any further relative gain, but were maintaining the gain made in phase 1.

Reference

Brooks and Hutchison (2000)

(6) Nottinghamshire

It is not clear when BRP came into use in Nottinghamshire, and details are sparse. However, given that the implementation seems to have been managed by Read On – Write Away! in Derbyshire, presumably the description above applies.

Evaluation

Data were received from ROWA! in Derbyshire on BRP in Nottinghamshire in 2004–06. There were remarkable gains across Years 2–6.

Reference

Unpublished data supplied by Karen Hanson

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3.5 Catch Up Literacy (formerly known as Catch Up, then as The Catch Up Project)

Catch Up Literacy is a one-to-one literacy intervention for struggling readers aged 6–14. It is centred on a 10- to 15-minute structured teaching session delivered once or twice a week by a teacher or teaching assistant and tailored to the needs of individual children. It is currently (2007) in use in more than 4000 schools across the UK, and has been implemented in clusters of schools by more than 60 LAs. Test results have shown that it has made a significant difference in literacy skills for the majority of primary pupils who have received it. A key factor in its success appears to be that it is practical and inexpensive to implement in a variety of school contexts.

Scheme

Catch Up Literacy was initially developed in 1998 at Oxford Brookes University, in partnership with the Caxton Trust, as a result of a study undertaken by the project consultants, Diana Bentley and Dee Reid. A pilot evaluation was then carried out, together with Suzi Clipson-Boyles. The research helped to identify a systematic method for supporting individual struggling readers in Year 3. Further research and extensive trialling have extended the scheme to support struggling readers in Year 2, Years 4–6, secondary schools up to Year 9 (see section 3.44), and a range of other settings (such as Looked-After Children).

Catch Up Literacy begins with a comprehensive assessment procedure which provides pre-intervention data and from which the adult tutor determines the child's Catch Up Literacy level and targets. The Catch Up Literacy level is used to identify a book appropriate for the individual child which s/he will be able to read with 90% success (instructional level).

The individual sessions have three parts:

- During the prepared reading, the adult talks through the text and pictures of the selected book, providing key vocabulary and familiarising the child with the story.
- The child then reads the story while the adult records progress and identifies words to follow up.
- This is followed by a linked writing or spelling activity based on the child's miscues earlier in the session. The adult helps the child with the reading and spelling of the word using a variety of methods, including phonics and the visual recognition of irregular words.

Catch Up Literacy has produced a range of support materials, including two interactive CD-ROMs and a Parent Links booklet and video. All adult tutors receive training (Open College Network accredited), and additional support is provided for them via the Catch Up Community.

Evaluations

The full programme of Catch Up Literacy is intended to last a whole school year. However, the initial evaluation was a one-term pilot study carried out by the programme developers in the autumn term of 1997, with some statistical advice from NFER in the school year 1998-99 (Clipson-Boyles, 2000). It showed that the programme group made substantial progress in reading accuracy, an alternative intervention group just over standard progress, and the comparison group fell even further behind.

Then in 1999–2000 the National Experimental Study replicated the Pilot Study over an academic year with a larger group of schools. Three groups of children were monitored over this period to compare the progress of those on Catch Up Literacy with (a) those given a non-specific matched time equivalent intervention by the teacher, and (b) a comparison group. However, the total number of children in this study was only 98, and all three groups made standard progress or just above in reading accuracy.

By 2002, other evaluation data from Cornwall, Norfolk and Wakefield provided stronger evidence on the basis of samples totalling over 1300. For this edition, the data from Cornwall and Wakefield and some of those from Norfolk have been dropped in favour of more recent evidence from Norfolk, Barnsley and Hampshire.

In 2007, outline aggregated data were received for almost 7000 pupils in Years 2–9 in over 20 LAs across England, but more detailed aggregated data or pre- and post-test data at individual level were received only for various subsets. The following selections were made from the more detailed information at primary level, namely, data on:

- 446 pupils in an unknown number of schools in Norfolk; these and earlier data show good to substantial gains in reading comprehension for six samples, but standard progress for one Year 6 group, and limited or no progress for three of these groups in spelling;
- 126 pupils in 14 schools in Barnsley; a Year 2 group and a Year 6 group made useful progress in comprehension;
- 130 Year 2–6 pupils in six schools in Hampshire; they also made useful progress in comprehension.

References

Clipson-Boyles (2000), Reid et al. (2004), Sykes (2005), Worsley (2001, 2003a, 2004, 2005a, 2006), and unpublished data supplied by Julie Lawes

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3.6 Cued Spelling

Cued Spelling is a procedure designed by Keith Topping and colleagues at the University of Dundee for two individuals working together. The pair might be parent and child working at home or two children working together in school. In school, the children can be of the same or different age and spelling competence. They may remain in role as tutor and tutee, or the roles may reverse at intervals. Cued Spelling can also be used for whole-class tutoring.

Scheme

According to the authors, the technique consists of ten steps, four points to remember, and two reviews – a chart setting all this out can be obtained via the website. The most accessible description of the method is in Topping (2001). He admits (p. 181) that it looks 'rather complicated' but maintains that 'You can train seven-year-olds to do it in half an hour – it is a lot simpler than it looks'. It is usually done three times a week for an initial trial period of six weeks. Each session takes about 15 minutes.

Evaluations

Topping (2001, pp. 196–202) summarised several studies on this technique. The one with the largest sample (France et al., 1993), also summarised in Topping (1995, 2001), is analysed in the Appendix, plus some more recent data from Bristol. France et al. trained 47 parents as tutors, and gathered test data on 22 children, who made remarkable progress. In the Bristol study there were useful gains.

References

France et al. (1993), Topping (1995, 2001),
www.bristol-cyps.org.uk/teaching/sen/pdf/sen_wave3_report.pdf
and unpublished data supplied by Sue Derrington

Contact

www.dundee.ac.uk/eswce/specialist-centres/cpl/

3.7 Direct Phonics

Scheme

Direct Phonics was developed on the basis of the same rationale as IA&T – see section 3.18. It is targeted at children at School Action or School Action Plus, i.e. those who continue to struggle with basic literacy even after they have participated in initiatives such as Early Literacy Support. There are three manuals containing planned, structured lessons:

Book One covers single-letter sounds, CVC words, two consonant digraphs <sh, ch> and a selection of sight words for sentences.

Book Two teaches children to blend and segment words containing adjacent consonants, revises the two consonant digraphs, and introduces <qu> and a selection of vowel digraphs <ee, ay, ar, ow, oo, ea>.

Book Three teaches children to read and write polysyllabic words, e.g. fan-tas-tic. They also learn to read and write compound words, e.g. sea-shell.

Evaluation

Informed by curriculum-based evaluations of progress, several LAs have used the scheme and have endorsed it. The only set of standardised test data large enough to be analysed came from 24 children in Middlesbrough; they made modest progress.

Reference

Unpublished data supplied by Rea Reason

Contact

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3.8 Early Literacy Support

This study forms part of the ongoing York series based on Reading Intervention – see further commentary under that scheme, section 3.29.

Scheme

Early Literacy Support (ELS) is one of the Primary National Strategy's suite of catch-up programmes. It begins in the spring term of Year 1, and is intended for children in the bottom 25% of the distribution who have made a slow start in literacy. In each school groups of six children follow a 12-week programme of 60 daily, scripted 20-minute lessons given by a teaching assistant. There is a developmental sequence of phonic, sentence-level and text-level work in reading and writing. There are support materials, and materials for parents to use at home with their children, and links are expected to be made with what the class teacher is doing in the regular programme. By the end of the programme children are expected to be able to name about 35 high-frequency words on sight, spell some common irregular words, and use various cues in text to identify words that are difficult to read.

Evaluation

In the study reported here, ELS was compared with Reading Intervention. For main features of Reading Intervention, see section 3.29. For this study RI was modified such that, instead of being delivered entirely one-to-one by teaching assistants, half the sessions remained one-to-one and focused on reading books and reassembling cut-up stories, while the rest became group sessions focused on letter and word identification, phonics, and story-writing. The amount of time for each child was nominally 20 hours in both programmes.

Both groups of children made modest and equal progress, and maintained their gains three months after the programmes ended.

Reference

Hatcher et al. (2006a)

3.9 Enable (Enhancing Attainment in Basic Literacy)

Scheme

This suite of literacy intervention programmes was developed by the Inclusion Support team in Sandwell Local Authority. The first version was ENABLE-Plus, for pupils in Years 3–5, then came ENABLE – One to One, for Year 2, and most recently ENABLE-PLUS (Key Stage 3), for Years 7–9. The Year 2 version is delivered, as its name says, one-to-one; each child receives a daily 30-minute session for eight weeks. In the other versions groups of three children receive 30 minutes' group teaching twice a week, and each child also receives 10 minutes' individual teaching once a week. ENABLE-Plus runs for 22 weeks, ENABLE-PLUS (Key Stage 3) for 10–14 weeks. ENABLE-Plus and ENABLE-PLUS (Key Stage 3) are only suitable for delivery by employed school staff (e.g. teaching assistants, learning support assistants), whereas ENABLE – One to One can also be delivered by volunteer helpers. Otherwise, the details are the same for all three versions.

Each school that wishes to run a programme nominates a school coordinator. School coordinators attend training provided by Inclusion Support (IS) to prepare for setting up projects in their own schools. They then recruit tutors, identify pupils needing support, arrange for IS staff to provide training for the tutors, provide ongoing support to the tutors, and evaluate pupils' progress.

Briefly, the teaching consists of: direct instruction of high-frequency words or phonic skills; prepared reading of novel text; repeated practice using familiar text; using skills via guided and shared reading; employing a variety of texts to apply skills. Promoting self-esteem is also a core aspect of the ENABLE suite of programmes (cf. the Somerset projects in section 3.34), and forms an integral part of the training. The pace of instruction is influenced by the pupils' rate of progress, thereby ensuring that all skills are learnt to Mastery level.

Evaluations

Both primary-level evaluations analysed in the Appendix were carried out by the authors of the scheme. One showed substantial gains, the other useful gains.

References

Bowen (2003), Bowen and Yeomans (2002) and unpublished data supplied by Phil Bowen

Contact

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Connor Education Centre
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3.10 Family Literacy

(1) Basic Skills Agency's Demonstration Programmes

The aims of the scheme were intergenerational; they balanced intended benefits for the parents' literacy with intended benefits for their children. It was hoped that improving parents' skills would enable them to help develop their children's language and literacy.

Scheme

The scheme was devised at the Basic Skills Agency in 1993, and stemmed from the fact that children whose parents experience problems with literacy are themselves more likely to experience literacy difficulties, thus continuing the cycle. The Basic Skills Agency devised the initiative with the aims of raising standards of literacy among adults with difficulties, boosting their ability to help their children, and increasing the children's literacy skills.

The programme recruited those most in need of help. The participating parents were therefore, in general, poorly qualified and not employed outside the home. The programme was set up in four areas of multiple deprivation, in Cardiff, Liverpool, Norfolk and North Tyneside. Any parent who had a child aged between three and six years was welcome, as long as both parent and child attended the course. Between the four programmes, 361 parents and 392 children completed a course during the period of the evaluation.

The courses ran eight hours a week for 12 weeks. Each week there were two separate sessions (parents in one room, children in another) and one joint session. In their sessions, parents worked on their own literacy skills and towards accreditation for their achievements, and learnt how best to help their children. The children's sessions were a mixture of nursery and infant school practices and approaches, as appropriate to the ages of the particular children attending. In the joint sessions the parents worked with their own children, applying what had just been learned.

Evaluation

A team at NFER was commissioned to evaluate the initiative in the four school terms from summer 1994 to summer 1995. In this section, only the reading data are considered – for the writing data, see section 3.56. All children aged at least five on entry to the course were given the Reading Recognition subtest of the Peabody Individual Achievement Tests (PIAT) both at entry and on completion of the course. PIAT data were available on 147 children at pre- and post-test. Varying numbers of children were re-tested at three points: 12 weeks and nine months after the end of the intervention, and between January and April 1997, which was between 20 and 34 months after the end of the intervention for individual children.

The pre-test showed the children as disadvantaged and at great risk of educational failure. During the courses, they made an average gain of over 4 standardised score points in reading (= modest progress), and the educational outlook for many of them was improved. At 12-week follow-up, the summer and autumn 1994 cohorts had made further relative gains, but not the spring and summer 1995 cohorts. At 9-month and 1997 follow-ups, the children had on average sustained their gains.

References

Brooks et al. (1996, 1997); Gorman and Brooks (1996)

(2) The Basic Skills Agency's model in Hampshire

A replication of the Demonstration Programmes was mounted in Hampshire in 1996–97, and evaluated by Dwynwen Stepien of the University of Portsmouth with a small sample (27). However, the impact seemed considerably more powerful than in the Demonstration Programmes.

Reference

Stepien (1997)

(3) The Basic Skills Agency's model adapted for New Groups

For reasons beyond the Agency's control, the Demonstration Programmes contained hardly any families from linguistic minorities. By design, the programmes were limited to families with a child aged 3–6. In a further initiative in 1997–98, the Agency set up pilot programmes for linguistic minority families and for families with a child in Year 4. These were again evaluated by a team from NFER. The adaptations for linguistic minority families and those with a child in Year 4 were judged appropriate, with successful adaptation for linguistic minority families requiring close attention to issues of bilingualism. Both groups of children made useful gains.

Reference

Brooks et al. (1999)

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3.11 FFT Wave 3

A document from the Primary National Strategy (2006) points out that differentiation is beginning to occur within Wave 3. Intensive one-to-one programmes delivered by specially trained teachers (e.g. Reading Recovery) continue to be used with the lowest-attaining children in Year 1 and Year 2, but less intensive programmes which can be delivered by teaching assistants working one-to-one with struggling children of these ages are being developed. They are intended for children for whom Wave 2 programmes (e.g. Early Literacy Support) do not appear to be working, but for whom intensive teacher-delivered programmes may not yet be appropriate (or available). FFT Wave 3 is such an intermediate programme.

Scheme

This description is taken from Canning (2004):

> The programme is aimed at children in Year 1 and above who are working within or below Book Band 2. Designed to be delivered by experienced teaching assistants, it consists of a rolling programme of a reading day, writing day, reading day, writing day, etc., taking place for 15-20 minutes daily on a one-to-one basis.

Reading Day

The child:

1. rereads a familiar book (4/5 mins);
2. carries out three fast letter-work activities (3 mins);
3. reads a new book following a book introduction (8 mins);
4. reconstructs a cut-up sentence from the book (2 mins);
5. learns a new word from the book (2 mins).

Writing Day

The child:

1. rereads yesterday's new book – the adult takes a running record once a week (5 mins);
2. revises word(s) previously learned (2 mins);
3. composes and writes a sentence based on a picture or stimulus from the book just read (7/8 mins);
4. reconstructs a cut-up sentence taken from the written sentence (2 mins);
5. learns a spelling from the writing just completed (2 mins).

Evaluation

A pilot programme in four LAs (Bradford, Brent, Manchester, Redcar and Cleveland) was evaluated in 2004. There was a useful gain.

Reference

Canning (2004)

Contact

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3.12 Five Minute Box

Scheme

The Five Minute Box is a multi-sensory teaching system designed to establish early literacy skills, for all children who find it difficult to keep up with the pace of classroom learning.

The idea of the Five Minute Box as an early intervention and screening tool grew out of years of experience with primary-age children who had failed to master the art of reading and spelling, and who had become disenchanted with the process of learning. These children need regular extra teaching. The programme of teaching has been designed to cover the basic skills for the acquisition of literacy; as such it is mainly intended as Wave 1, but is also in use as a Wave 2/3 intervention. It is designed for use by learning support assistants on a daily basis. The skills are separated into different areas, so that a child can make progress in one area, while still being allowed time to completely master another area at a slower pace.

Motivation, organisation and self-help strategies are built into the programme. The recording of progress is shared each session with the child, and progress is divided into small 'milestones'. These stages are monitored by the SENCo and class teacher and can be shared with parents.

Evaluation

The scheme has been in use for some years in Southampton, and data from one year of use there are analysed in the Appendix. The gain was only just above standard progress.

References

www.fiveminutebox.com
Unpublished data supplied by Rosy McVittie via Graham and Jane Kendall

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3.13 Further Literacy Support

Scheme

Further Literacy Support (FLS) is, like Early Literacy Support (section 3.8), one of the National Primary Strategy's suite of catch-up programmes. It was piloted in 2002, and made available for all primary schools in England in 2003. It is targeted at Year 5 children whose attainment is within a specified range, namely, between level 2a and level 3 in National Curriculum English.

The main features of FLS are as follows. Towards the end of the first term in Year 5, the school identifies those children who will benefit from a more intensive programme of support. This is assumed to be about 20% of an average class; that is, a group of about six children. To identify the target FLS group, schools use the screening material that is provided in the programme, together with assessment information from the school's own procedures for tracking individual attainment.

FLS comprises 12 weeks of additional support in term 2 provided in three 20- to 30-minute withdrawal group sessions per week taught by a teaching assistant. The sessions are planned in collaboration with the teacher and are supplemented by independent and homework tasks, using specially written materials. The FLS materials comprise the following: a teacher's book, with CD-ROM; a full-colour A4 booklet for every child; additional teaching resources including posters, homework sheets and prompt cards; and teaching assistants' books for teaching the three modules: Writing to Persuade; Fantastic Tales; and Writing to Inform. The programme of support is provided in addition to ongoing classroom teaching.

Teachers and teaching assistants are trained in the first (autumn) term in three sessions organised by the local authority, using centrally-provided training resources. The training includes guidance in carrying out screening procedures to identify those pupils who are thought likely to benefit, those who, with additional support, can achieve level 4 or above in the Year 6 national tests.

Evaluation

A national evaluation was commissioned by the DfES and carried out by a team at the University of Leeds in 2002–03. Many of the pupils in this study were followed up in Year 6 in 2003–04. Full data are given on this study in the Appendix. Test data show that the experimental group made significantly greater gains than the comparison groups in reading (and in writing – see section 3.57), and had maintained their lead 12 months after the programme ended.

A further evaluation was carried out in Year 5 in most of the same schools in 2003–04: this targeted the next cohort of children. However, this study is not analysed here because no impact measures were stated and the information to calculate them was lacking.

References

Beard et al. (2004, 2005, 2007)

3.14 Improving Spelling by Teaching Morphemes

This is the name I have given this project, based on the title of the book by Nunes and Bryant (2006); the authors do not seem to have given it a name.

Most approaches to improving spelling take either a phonological (or more specifically a phonic) approach or a visual one, or some combination of the two. Some of the authors of the study analysed here have been working for several years on using morphology (the study of morphemes, the smallest units of linguistic meaning) instead, or in addition.

Scheme

The 17 teachers involved attended a 10-session course covering morphology and comprehension, and were provided with practical materials, including PowerPoint slides and notes, to enable them to use morphemes explicitly in teaching spelling. The aim was to help children see how words can be divided into stems and affixes, all contributing to their meanings. Affixes were both inflectional (<–(e)s> for plural, <–ing> for present participle and gerund, <–ed> for past tense and participle) and derivational (e.g. prefix <un–>, suffix <–less>, agentive suffix <–er> changing verbs to nouns, e.g. teach to teacher). The spelling intervention materials were designed to provide seven lessons.

Evaluation

This was mainly conducted by the authors of the scheme in one school year. One of the teachers involved then conducted her own smaller study the following year. In both phases children who received the scheme made better progress in spelling than children who did not; in the second phase children who received the scheme also made better progress than children who received extra NLS spelling sessions.

References

Hurry et al. (2005) for the project analysed here; Nunes and Bryant (2006) for the general picture

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3.15 Individual Styles in Learning to Spell

Scheme

In 1996–99, the DfEE funded a three-year project by the Helen Arkell Dyslexia Centre investigating individual styles in learning to spell. Several pilot and exploratory phases led to the production of a teaching pack offering ten different teaching approaches, from which teachers were to select for individual children based on a simple assessment of their preferred styles. The approaches were: Neurolinguistic Programming, Onset-Rime, Look-Cover-Write-Check, Own-Voice, Tracing, Simultaneous Oral Spelling, Picture Association, Mnemonics, Phonics, and Look-Say. All the approaches were described briefly in a teaching pack which is reproduced at the end of the research report.

Evaluation

The developers of the project evaluated it both in special schools (with groups too small to be reported here), and in three mainstream schools, of which two provided data that could be analysed for this report. A cross-over design was used, involving two groups of children. In phase 1, one group received the intervention while the other acted as a comparison group. In phase 2, the second group received the intervention, while the children in the first group also continued to do so. The results were in line with prediction. In phase 1 the first group (receiving the programme) made significantly more gain than the comparison group, who made only standard progress; in phase 2 both groups made gains and the difference was non-significant. Thus both groups made good gains while receiving the intervention, while the second group made only standard progress in phase 1 before receiving it, and the first group continued to make better than standard progress in phase 2.

Reference

P. Brooks and Weeks (1999)

3.16 Inference Training

This scheme focuses upon the band of children who fall within the normal range of cognitive ability yet fail to comprehend fully what they read. The authors break down the many skills needed to understand a text into manageable chunks: lexical elaboration, question generation and comprehension monitoring. Tasks are designed so that children can make links between the text and its meaning. Sessions last between 20 and 45 minutes, twice a week for four weeks.

Scheme

Previous studies by Yuill and Oakhill at the University of Sussex had shown that less-skilled readers have difficulty in making inferences from text. They argued that word recognition and decoding skills are not always adequate in developing good reading skills. The meanings of individual sentences and paragraphs have to be integrated so as to understand the main ideas of the text. It has been suggested that working memory plays a part in this skill.

Yuill and Oakhill tested the effect of children's reading comprehension using three types of intervention:

- Inference skills training (this consisted of lexical inference, question generation and prediction);
- Comprehension exercises;
- Rapid decoding practice.

The same narrative texts were used in all three intervention conditions. The experimenter saw children in groups of three to five, twice a week over three and a half weeks. Length of sessions varied from 20 to 45 minutes. Training sessions lasted slightly longer than control sessions, since subjects had to spend time thinking of questions, whereas the control group had precise tasks to perform that did not involve long periods of silence.

Evaluations

Yuill and Oakhill's was an experimental study, rather than an evaluation of a separately devised project. The results showed that less-skilled comprehenders benefited from Inference Training more than skilled comprehenders. The authors concluded that for less-skilled comprehenders Inference Training was both more beneficial and more helpful than decoding practice. However, comprehension exercises appeared to be as beneficial as Inference Training.

This experiment is of particular interest because so few studies have tackled comprehension improvement directly. It is believed that children in the Inference Training groups gained new confidence and enjoyment from the reading tasks, and motivation was high relative to the repetitive tasks required in the decoding groups. However, observations showed that the decoding group found the rapid reading task challenging, and they had faster reading speeds. This suggests that less-skilled comprehenders' deficits are not a result of slow decoding.

Some much more recent (2006) data were obtained from Leicester, where Tony Whatmuff had developed an intervention using Inference Training which was evaluated by a group led by Joanna Lockley. The results showed remarkable gains in both accuracy and comprehension for the experimental group, but also a much smaller but still substantial gain in comprehension for a comparison group (accuracy was not tested for the comparison group).

References

Yuill and Oakhill (1988), unpublished data supplied by Joanna Lockley

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3.17 Integrated Learning Systems: the National Council for Educational Technology study

Integrated Learning Systems is the general name for a number of computer-based learning systems, and for initiatives using them. The study summarised here is the one mounted by the National Council for Educational Technology (NCET, now the British Educational Communications and Technology Agency, BECTa).

See also the entry for Lexia, section 3.19.

Scheme

NCET provided a number of schools with both hardware and educational software designed to facilitate independent learning by pupils. The two main systems evaluated were SuccessMaker and Global Learning Systems. Both have extensive programs for both literacy and numeracy. Most schools in the study used the numeracy packages; only about half used the literacy packages. The literacy packages provided massive amounts of guided practice on all aspects of literacy; they also gave feedback on errors, and kept track of pupils' progress for their own and their teachers' benefit.

Evaluations

Both Phase II and Phase III were implemented in both primary and secondary schools. The primary data are considered here, the secondary data in section 3.47.

(1) Mainstream, Phase II

Phase II of the project (1994–96) was evaluated by a team led by the University of Leicester. (Phase I was smaller, though its conclusion for literacy was much the same as in Phase II.) Though the results of Phase II for numeracy were reasonable, those for literacy were unimpressive: no overall benefit compared to comparison groups. Two exceptions were noted:

- a Special School where children in the comparison group outperformed those in the experimental group;
- a mainstream primary school where the ILS group did significantly better than the comparison group, but only after teachers switched off all but the comprehension modules of the computer program – see section 2.9.

References

NCET (1994, 1996); Underwood (1997); Underwood and Brown (1997); Underwood et al. (1994)

(2) Mainstream, Phase III

Phase III of the project (1996–97) was evaluated by three teams, based at NFER, the Curriculum, Evaluation and Management Centre (CEM) at the University of Durham, and the University of Leicester. In this Phase, the only primary year group involved was Year 5. The difference in progress between experimental and comparison groups was small, but reached statistical significance simply because the samples were large, and was counter to expectation: the comparison group made marginally greater progress than the experimental group.

References

BECTa (1998); Underwood (1997); Underwood and Brown (1997)

(3) For pupils with low attainments in reading

Within the NCET study special attention was paid to pupils with special educational needs (Lewis, 1995) and other underachievers (Gardner, 1995), on the hypothesis that they might particularly benefit from the technology. Lewis (1999) reviewed this work, including her own study, and several other UK interventions

using ILS with pupils with low attainments in reading. Because of small sample sizes and the existence of Lewis's thorough review and analysis, none of the data from these studies are reproduced or analysed here. However, Lewis concluded (p. 156, emphasis original) that

> teachers' beliefs about the value of Integrated Learning Systems for pupils with special educational needs or learning difficulties are not supported by the findings from the major UK evaluations. These, as noted in the final report (BECTa, 1998), do not indicate that pupils were learning nothing from Integrated Learning Systems, but rather that whatever they were learning was not being transferred to the outcome measures used in these studies. Overall, the use of Integrated Learning Systems was not conspicuously more effective than other approaches in terms of these outcome measures... .

In other words, the value of this technology for these pupils is still very much Not Proven – just as with mainstream pupils. Ann Lewis (personal communications, 2002 and 2007) confirmed that no further evidence had since emerged to modify her conclusion.

For example, under the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) programme, Andrews et al. (2002) undertook a mapping review of the impact of ICT on literacy learning in English for 5- to 16-year-olds, plus a systematic review of the impact of networked ICT on literacy learning for ages 5 to 16. The quality of the 188 mapped studies was extremely variable, and the 16 studies of networked ICT and literacy learning were too heterogeneous to allow meta-analysis. In 2002 I requested a search within the library of 188 studies for those which were British and conducted with primary-age pupils (I have not followed up any secondary examples): there were 17. Of these, just three dealt specifically with pupils with low attainments in literacy. Two had sample sizes of ten and nine, too small to be reliable; the third could not be obtained in time to be analysed. The value of ICT for poor readers and writers at primary and secondary levels still requires to be demonstrated, except in carefully targeted exceptions such as AcceleRead AcceleWrite.

References

Andrews et al. (2002); Gardner (1995); Lewis (1995, 1999)

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3.18 Interactive Assessment and Teaching

This entry needs to be read in conjunction with those for Direct Phonics and RITA – sections 3.7 and 3.32.

Scheme

The Interactive Assessment and Teaching (IA&T) approach is the programme advocated by Reason and Boote (1994). It is a pragmatically based approach that is designed for children with special educational needs, and is compatible with current theoretical approaches to the teaching of reading. It is an individually adaptive, curriculum-based support programme with the emphasis on word-building and phonics skills in a broad reading context. The model of literacy development includes both writing and reading, and their interaction. Furthermore, three separate aspects of literacy are considered – meaning, phonics and fluency. While beginning readers often have difficulties with 'meaning' – understanding the 'rules of the reading game', it is with phonics and fluency that most poor readers struggle. On the basis of this theoretical and pragmatic analysis of development of skills and knowledge in reading, Reason and Boote developed their 'step by step' approach to tailoring the reading support to the individual capabilities of each reader. This involves five steps: Firstly, make an initial assessment in terms of the four stages for Meaning, Phonics and Fluency separately. Secondly, decide on priority teaching areas. Thirdly, develop a support plan, in terms of the objectives and the learning steps involved, making sure that each step is achievable. Fourthly, select appropriate teaching methods and teach each step, trying to ensure variety and motivation. Finally, record and evaluate progress, keeping records for each step.

Evaluation

The IA&T programme was studied in the first of two phases of a research programme devised by researchers from the Psychology Department of the University of Sheffield. Both phases involved children in Year 2 and Year 3.

The results of phase 1 were mixed. The IA&T children made significantly greater gains than those in the control groups during the ten weeks of the intervention in both reading and spelling. For Year 2 the gains in spelling were maintained in follow-up tests six months later, but almost completely lost in reading (the control group had slipped back even further). For Year 3 the gains in reading were maintained, while the spelling gain was partly lost.

In phase 2, the pre- and post-test data from phase 1 were used for 'alternative intervention' comparisons with the same research team's computer-based version of IA&T, RITA (Reader's Intelligent Teaching Assistant). RITA has its own entry in this chapter (section 3.32), and the comparisons between IA&T and RITA are considered there.

References

Fawcett et al. (1999); Nicolson et al. (1999); Reason and Boote (1994)

3.19 Lexia

Scheme

Lexia is a computer-based Independent Learning System (ILS) with several programs, developed in the USA for children with dyslexia, and now in use in several areas in Britain as a Wave 3 intervention. It is predominantly phonics-based, beginning at initial letter level, and includes a simple comprehension element. Pupils work through a program independently and at their own pace. The computer keeps track of their progress (records can be printed off) and provides extra practice on aspects which pupils find difficult. Teachers need to give initial guidance on using the program, teach and reinforce some units, and mainly oversee and monitor how their pupils are getting on. In the York study it was specified that pupils should have three 20-minute sessions a week, in the Norfolk study two 20-minute sessions a week.

For an evaluation of another ILS, see section 3.17.

Evaluations

LexiaUK sent details of six projects in England (one of which was also received direct from the authors) and of two in the USA. Two of those in England were large enough to be analysed and provided data from which impact measures could be calculated. Both showed useful gains in comprehension. In spelling, the York study showed a useful gain, but the Norfolk study showed only standard progress.

References

Wilson and Clarke (2005); Worsley (2003b)

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3.20 Multi-sensory Teaching System for Reading (MTSR)

Scheme

MTSR is described by its UK providers as 'a fully scripted, multi-sensory, structured, sequential package for teaching word level reading. It is based round the teaching of three elements of the reading process – phoneme/grapheme relationships, rules of English, and how to tackle irregular words'. It is derived from a scheme developed in Texas by Margaret Taylor Smith and called Multi-sensory Teaching System (MTS). MTSR was developed and produced at Manchester Metropolitan University in collaboration with the British Dyslexia Association; development was financed by a research grant from the (then) Department for Education and Science. The published teaching pack consists of a teacher's book, two books of teaching materials with cards, and a videotape.

Evaluations

The developers have so far mounted four evaluations: a pilot study in 12 primary schools in three LEAs in the North West of England, and three larger studies, in Rutland, Ireland and Bolton. The one in Rutland was not reported in enough detail to analyse, and the one in Ireland is not relevant here. The pilot study included a comparison with a scheme called 'Beat Dyslexia'. The pilot and the Bolton study (which was financed by the D*f*ES through its 'SEN Small Programmes Fund') are analysed in the Appendix. The impacts on reading were useful to substantial. For spelling the results were curiously contradictory: the pilot study had a large negative ratio gain, while the Bolton study had a massively positive one. They are among the most extreme impact measures that appear in this report.

More recently some data were gathered independently in Southampton. These showed a modest gain for reading.

References

Johnson et al. (1999) and unpublished data supplied by Mike Johnson; unpublished data supplied by Rosy McVittie via Graham and Jane Kendall

3.21 Paired Reading in Kirklees

This is one of the simplest schemes yet devised, and the subject of one of the largest evaluations.

Scheme

Paired Reading was devised by Morgan (1976) to meet the needs of children who were finding reading difficult and to involve non-professionals in helping them. He designed it to be simple to administer after the minimum of training, and flexible, in that it could be applied to any form of reading material. The fullest description is in Morgan's (1986) book, and it is summarised in diagrammatic form in Topping and Lindsay (1992, p. 200) and on the website. Essentially, it is a 'scaffolding' approach in which tutor and child begin by reading aloud together, and the tutor gradually withdraws and leaves the child to read aloud alone. Techniques are specified for intervening when the child falters or makes an error, and praise is given regularly.

Evaluations

Topping and Lindsay (1992) reviewed dozens of studies from across the English-speaking world, and Topping (1990) himself carried out the largest evaluation, which was of the Kirklees project. That evaluation covered not just one project in that LEA, but 155 projects spread across 71 schools, both primary and secondary. The results consistently showed that the technique was effective, and other partnership approaches have imitated, incorporated or adapted it. Some socio-emotional outcomes are summarised at http://www.dundee.ac.uk/eswce/research/projects/readon/evaluation/

Topping's work has led on to other forms of Paired Learning: Cued Spelling and Paired Writing (which have entries in this report, sections 3.6 and 3.58) and Paired Thinking (which does not).

References

Morgan (1976, 1986); Topping (1990, 1995, 2001); Topping and Lindsay (1992); Topping and Wolfendale (1985); Wolfendale and Topping (1996). Also, for an evaluation in Dublin with children with moderate learning difficulties, Nugent (2001)

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3.22 Parental Involvement in Reading in Haringey

'Learning at a parent's knee' must be among the world's oldest teaching methods, but only in recent years has it been formalised and generalised under the title of parental involvement, and researched.

Scheme

There have been many schemes bearing or deserving the title Parental Involvement both in the UK and beyond. For the purposes of this report, the first well-known and well-researched scheme of this sort in the UK, the Haringey project, has been taken as the paradigm:

> The experimental innovation in the Haringey project consisted in asking all parents of children in certain top infants' [Year 2] classes to listen to their children read aloud for a short period, several times a week, from reading material selected and sent home by the child's class teacher... It was found that... the great majority of parents provided constructive help and support for their children, and avoided counterproductive behaviour such as pushing their children too hard, or confusing them with inappropriate information.
> (Hewison, 1985, pp. 47–48)

One major factor in that success seems to have been the motivation provided by the parent's close attention to the child's development. The original project provided little in the way of guidance to parents on how exactly to share books with their children, and subsequent schemes have refined this part of the approach.

Evaluation

The original research in Haringey LA was conducted by a team from the Institute of Education, University of London led by Tizard. The approach was found to be highly effective, and much more effective than extra teacher help with reading in school. In addition to pre- and post-tests, the design included two follow-ups, one year and three years on; both showed that the gains had been maintained.

References

Hewison (1988); Tizard et al. (1982); Topping and Wolfendale (1985); Wolfendale and Topping (1996). Also, for a failure to replicate the Haringey effect in a different context, Hannon (1987), Hannon and Jackson (1987)

3.23 Personalised Learning

Scheme

Working in partnership with colleagues from CfBT, the Language and Learning Support Service (LLSS), part of Children's Services in East Sussex, ran a Wave 3/Personalised Learning literacy project with Year 3 pupils in 45 schools in 2006. Following the success of this, it was extended in 2007 to include Year 1 children.

With both cohorts the children were identified as those working at Wave/level 1 in reading. Both the teacher and teaching assistants (TAs) worked with selected children on a one-to-one basis for 15 minutes a day over a period of three months on a 'specific small steps' programme of reading support.

All the teaching sessions were driven by a detailed analysis of each pupil's literacy abilities, and involved ongoing assessment. This enabled informed decisions to be made about the specific small steps focus of each session. The teaching was highly structured, specifically targeted and interactive. Books were integral to the programme with new books specifically chosen for each pupil with particular regard to the child's interests and level. The programme of support for the Year 1 cohort differed only slightly as a response to findings from the original project, in that writing was given more prominence, as were pupil voice and parental involvement.

Each teacher and TA had intensive training over two full and two half days. This included diagnostic assessment techniques, tracking strategies, and the methods underpinning the sessions. Once the projects had started, support was made available from the LLSS via email and through visits, during which the teaching sessions were observed and feedback given.

Evaluation

The LLSS team collected their own evaluation data, which showed substantial gains of nearly a year of reading age in three months in Year 3, and a whole year of reading age in three months in Year 1.

Reference

Unpublished data supplied by Linda Perry and Carole Price

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Note on Blitz!

Blitz! is an early literacy intervention programme written specifically to help young children who have entrenched literacy difficulties, and is designed to be used easily by non-specialists within a school. The programme is very tightly structured, and cumulative, building the basic skills of literacy through a multi-sensory and interactive approach, where the emphasis is firmly on engagement and success. It has been likened to a Reading Recovery approach. It can be used in a small group or individually. Website for further information:
www.blitzsite.com

East Sussex purchased Blitz! in 1999 and ran a pilot trialling it in schools. Results were very positive and it has been seen since then as a Wave 3 intervention. Personalised Learning is based on it.

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3.24 Phono-Graphix™

'Letters are pictures of sounds.' Phono-Graphix™ is based on this beguilingly simple insight.

Scheme

Diane McGuinness (1997, 1998) surveyed what she thought was wrong with initial reading instruction and concluded that the main fault was not taking seriously the core design feature of English orthography – that it is an alphabet, a system for representing (originally and in principle) each distinctive speech sound with one symbol. She began developing a teaching system, and this was fully developed by her daughter-in-law and son, Carmen and Geoffrey McGuinness (1998), into the system known as Reading Reflex or Phono-Graphix™. The scheme arrived in the UK in a blaze of publicity in 1998. Its essential features are that it:

- develops the concept that written English is a phonemic code – each sound in a spoken word is represented by some part of the written counterpart;
- teaches the phonological skills of blending, segmenting and phoneme manipulation that are needed to use a phonemic code;
- teaches knowledge of sound-to-symbol relationships ('correspondences') explicitly.

The scheme is supported by detailed training and materials, and by a network and website.

Evaluation

Phono-Graphix™ has been taken up quite widely in the UK, and substantial data were received from Bristol LA. When accessed on 14 August 2002, the readamerica website gave details of work in Scotland and Sunderland, and of a small-scale evaluation at an independent specialist school for children with dyslexia in Surrey. The Surrey and Bristol data are analysed in the Appendix. The impact measures showed substantial progress.

References

Derrington (2001a, b); C. McGuinness and G. McGuinness (1998); D. McGuinness (1997, 1998); and unpublished data supplied by Sue Derrington
www.readamerica.net

3.25 Phonological Awareness Training

In developing the PAT programme (Wilson, 1993), originally for Buckinghamshire LA, the aim was to provide a new approach to phonics teaching. The idea is that by using the child's existing knowledge about letter-sounds and words, new words which contain familiar 'rimes' (identically-written word endings) should not present a problem in reading or spelling. Training worksheets containing specific rimes, supported by reading lists and sentences for dictation, were intended to enable children to have a better understanding of relationships between sounds and spoken words.

Scheme

Poorly developed phonological skills have been suspected as one of the causes of reading difficulties. The PAT programme is designed to help children in reading, spelling and writing phonically regular words. It is acknowledged that children need to experience a wide variety of stimuli such as story books, poems and rhymes to develop literacy skills. The programme aims to enhance children's literacy skills by making analogies. Children who have existing knowledge of word sounds can develop these by applying them to other words, thus using commonly occurring rimes. This way of teaching encourages a problem-solving approach rather than the traditional 'listen and learn' way.

The daily 10-minute programme provides intensive work on three skills within the same activities: identifying sounds, blending phonemes together, and segmenting or isolating sounds in words. PAT is made up of training worksheets containing specific rimes supported by reading lists and sentences for dictation. Training requires children to generate their own words from rimes. This is based on the idea that once children can understand the concept of reading and speech made by analogies, all they have to remember is how to form the rimes. There are no pictures or visual cues of any sort due to the fact that the child is learning to focus on sound and to develop a problem-solving approach to generate words. Pictures would deflect from developing their own strategies for remembering.

Evaluation

The developer of the programme and a colleague designed and implemented the evaluation. Three schools participated in the study. Equal numbers of programme and comparison children from each of Years 4 to 7 were selected in order to test the hypothesis that children with literacy difficulties who completed the programme would make better progress than their peers. All the children in both experimental and control groups were on at least Stage 2 (now School Action) of the SEN Code of Practice; the two groups of 24 children were carefully matched. The pre-tests were carried out between two and five weeks prior to the PAT programme. The post-tests were carried out by educational psychologists who did not know which intervention group the children were in. The programme ran for 20 weeks. Groups of six met four days a week for 20 minutes.

The results were not clear-cut. The children in the experimental group did make slightly more progress than those in the control group (and the difference was statistically significant); but the children in the experimental group made only standard progress.

References

Wilson (1993); Wilson and Frederickson (1995)

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3.26 Phonology with Reading

This study forms part of the ongoing York series searching for effective interventions for children at risk of reading failure, or already making a poor start in reading – see section 3.29.

Scheme

The Phonology with Reading programme consisted of training in three elements known to be robust predictors of reading development: letter knowledge, phonemic awareness and reading practice. Direct teaching in sight word reading was also included. It was compared with an oral language (OL) programme comprising instruction in vocabulary, comprehension, inference generation and narrative skills.

The inclusion of both the Phonology with Reading condition and the Oral Language alternative intervention was based on the 'simple view of reading' (Gough and Tunmer, 1986), namely, that phonological skills are fundamental to alphabetic literacy, while aspects of oral language ability beyond phonology provide the foundation for reading comprehension, which depends on the interaction of decoding ability and comprehension of spoken language. Based on the 'simple view', Bishop and Snowling (2004) developed a model in which the risk of word-level decoding difficulties is associated with phonological deficits, whereas the risk of reading comprehension difficulties is associated with poor oral language skills.

Both programmes were delivered by trained teaching assistants daily for 20 weeks; there were both individual and small-group sessions.

Evaluation

In this study, it was predicted that the Phonology with Reading condition would have superior impact on children's decoding competence, and the Oral Language alternative intervention on children's reading comprehension. The authors maintain that, taking all the measures used into account, these predictions were borne out, but the differences for reading itself were limited. The authors suggest there may be merit in a combined approach.

Reference

Bowyer-Crane et al. (2007, in press)

3.27 RAPID

Scheme

RAPID has been developed by Harcourt in collaboration with Dee Reid and Diana Bentley, who were the original authors of Catch Up Literacy. It aims to move Key Stage 2 pupils from a reading age of 5.6 years to a reading age of 8+ years.

There are 12 RAPID reading levels, which comprise six stages and correspond to National Curriculum reading levels. Targeted pupils are assigned to one of the RAPID reading stages according to their NC reading level and gradually progress through the stages to stage six. The programme consists of a collection of resources that includes reading books, a software package and assessment texts. The books are designed to be used by either a teacher or a teaching assistant on a one-to-one basis with pupils, with the aim of having two sessions a week. This can then be followed up using the software package. The software package aims to reinforce the learning from the reading books by using unique speech recognition software to enable pupils to practise their reading skills.

Evaluation

NFER evaluated the programme in the spring term of 2007. The design was very rigorous, namely, a cluster randomised controlled trial – that is, participating schools rather than individual pupils were randomly assigned to receive the programme or not – and the statistical analysis was similarly sophisticated: a repeated measures multi-level model. This enabled the possible biasing effects of a range of factors to be allowed for, in particular, the fact that pupils were clustered within schools. The experimental group made a statistically significantly greater gain than the control group, but the effect size was small. This does not necessarily mean that the intervention was not worthwhile – in medicine, a small effect size can be valuable if it means that many lives can be saved over a long period of time, and something similar may be true in education – but it is a salutary lesson: almost all the studies with less robust designs analysed in this report appear to show strong effects, whereas the very few studies with more rigorous designs (such as this one) tend to produce results with smaller impact measures.

One reason for the small difference between groups may have been that the control group schools were taking some action for their poorer readers, who also made progress, as shown by the ratio gains. The evaluators asked the control group schools what literacy resources they were using with their pupils who were in the study during the trial period, and a long list resulted. Resources mentioned (by at least one school in each case) included Lexia, Phonological Awareness Training, and Toe by Toe – see the entries for those schemes.

Reference

Smith, Styles and Morris (2007)

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3.28 Read Write Inc. (formerly known as rml)

This is Ruth Miskin's Key Stage 1 and lower Key Stage 2 (Years 1–4) phonics programme. It is mostly used as a Wave 1 programme, but in some places is in use as Wave 2 or 3.

Scheme

When in use as Wave 2 or 3, this scheme is designed for pupils who experience considerable difficulty in reading because they read slowly, hesitantly and/or with a great deal of inaccuracy. It is a synthetic phonics-based reading, writing and spelling programme which starts with the 44 phonemes of (most accents of) English and predominant graphemes for them, because the author maintains that difficulty in reading graphemes means difficulty in reading words, which will mean an inability to read text, which will inhibit comprehension. The scheme is structured, intensive and systematic, and relies on tailored, phonically regular yet age-appropriate texts, and on special training for teachers or instructors. Activities associated with each text help the pupils discover and practise techniques for investigating text and producing texts of their own. Emphasis is placed on cooperative learning in pairs.

Reading

The children:

- Learn 44 phonemes and the corresponding letters/letter groups using simple picture prompts
- Learn to read words using sound blending
- Read stories featuring words they have learned to sound out
- Show that they comprehend the stories through oral and written comprehension exercises

Writing

The children:

- Learn to write letters/letter groups which represent the 44 phonemes
- Learn to write words by saying the sounds and graphemes
- Write simple sentences
- Compose stories based on picture strips
- Compose a range of texts using discussion prompts

Implementation

The programme is organised by an in-school manager. All staff (teachers and teaching assistants) are trained together by a Read Write Inc. trainer who has taught and managed the programme (no cascade training is used). The children read and write for an hour each day, grouped according to their reading level. Children work with a partner to practise what they have been taught. This means that all children participate during the whole lesson; there is no 'down time'.

Evaluations

Evaluation data for Read Write Inc. as Wave 2 or 3 at primary level were hard to come by. The information analysed here arose from the use of the scheme as a Wave 3 intervention in Bristol and Haringey. In Bristol (one study) there was a useful gain for reading (both accuracy and comprehension) and a modest one for spelling; in Haringey (two studies) there were substantial gains in reading accuracy (comprehension and spelling were not tested).

Ruth Miskin has also devised Read Write Inc. Fresh Start, for Years 5–9. Secondary-level data on this are considered in section 3.50, but no data were obtained on its use at primary level.

References

www.bristol-cyps.org.uk/teaching/sen/pdf/sen_wave3_report.pdf and unpublished data supplied by Sue Derrington and by Christa Rippon via Jean Gross

Contacts

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3.29 Reading Intervention (originally Cumbria Reading with Phonology Project)

The Cumbria Reading with Phonology study supports the view that it is the combination of phonological training and reading that is important for helping poorer readers. Children are helped to isolate phonemes within words to appreciate that sounds can be common between words and that specific sounds can be represented by particular letters. Lessons also include story work.

Scheme

It is well documented that children who exhibit good phonological skills appear to make the most progress in learning to read. This study illustrates that a combined phonological and literacy skills training programme effectively boosts the reading skills of reading-delayed seven-year-olds.

Poor readers in Year 2 were assigned randomly to one of four groups. Group one received training in phonological skills and help in learning to read. Pupils in the second group received teaching in reading alone – the teaching of reading here and in the first group was similar to the form of Reading Recovery then current, with little phonological training. The third group received teaching in phonological skills alone. A control group received normal teaching. During the intervention period, which lasted 20 weeks, each of the experimental groups received forty 30-minute teaching sessions.

The reading with phonology package combined a highly structured reading scheme with systematic activities to promote phonological awareness. The first part of a session was devoted to rereading a familiar book whilst the teacher kept a record of the child reading. This allowed for rehearsal of familiar words in different contexts. Phonological activities and letter identification were also involved in the first part of the session, accomplished using a multi-sensory approach (feeling, writing and naming). The second part of the session involved writing a story and cutting it up. The last part of the session introduced a new book.

Evaluation

This was a very tightly designed and administered study, carried out by Peter Hatcher, an educational psychologist in Cumbria LA, and two colleagues from the University of York. The four groups were matched on reading age at the pre-test, and teaching time for the three experimental groups was equated as closely as possible. The 93 children in the three experimental groups were taught by 23 teachers. Each teacher worked with groups of two to nine children in order to reduce the effect of differentiation. The time of day at which children received their intervention was systematically varied. The people who administered the tests (who were not the teachers) were unaware of the children's experimental status.

The Reading with Phonology group made modest progress in reading (both accuracy and comprehension) and spelling, but still significantly more progress than the other three groups; the other groups did not differ – in other words, neither reading-only nor phonology-only brought about any greater progress than normal schooling.

Much the same finding emerged from a very similar study in Rhode Island, USA (Iversen and Tunmer, 1993), in which the reading intervention was the authorised form of Reading Recovery.

The reading with phonology approach, now known as Reading Intervention, or as Sound Linkage, the name of published materials derived from and supporting it, continues to be widely used in Cumbria, and Peter Hatcher has published further research on it. This shows that the initiative continues to be effective for the generality of poor readers. However, for children with moderate learning difficulties or dyslexia in the Hatcher (2000) study it seemed no more effective than no intervention, so that the search for methods that would work with severely reading-disabled children continued.

First came a study investigating the extent to which failure could be prevented. Hatcher et al. (2004) investigated whether adding various extra phonic activities to Reading Intervention would benefit children relative to that programme alone. The teaching began when the children were aged four-and-a-half on

average, and lasted for five terms. The children were assessed with a battery of tests at the outset and at three points during the experiment. The classes were allocated to one of four groups matched on pre-test scores, five classes per group, and the groups were then randomly allocated to one of three interventions or to the control group, who received 'only' a suitably age-adapted version of Reading Intervention. Data at the four time points were available for 410 children. Hatcher et al. reported some analyses for the whole of this sample, but mainly on two sub-samples: normally developing children (N=273), and children at risk of reading failure (N=137). The latter sub-sample was defined as 'the poorest third of children based upon the[ir] average [pre-test] scores' (p. 340). The authors concluded (p. 338):

> There were no selective effects of the different experimental teaching programmes for normally developing children. However, for those children identified as being at risk of reading failure, training in phoneme skills resulted in selective gains in phoneme awareness and in reading skills… A reading programme that contains a highly structured phonic component is sufficient for most 4½-year-old children to master the alphabetic principle and to learn to read effectively, without additional explicit phonological training. In contrast, for young children at risk of reading delay, additional training in phoneme awareness and linking phonemes with letters is beneficial.

Which is helpful – especially because it suggests that (1) children at risk of reading failure can be identified by appropriate testing at age 4½, and (2) extra phonological work with this group (the bottom third) may prevent some failure. However, Hatcher et al. also point out that this extra work did not produce gains for all the at-risk children in the relevant groups: even with this extra input, about a third of the children in these groups did not benefit. Thus, as many teachers have suspected, there is a small but difficult group of children who are going to require very intensive and specialised help if they are to progress in reading.

The next study in the series compared Reading Intervention with Early Literacy Support (ELS), and is analysed under the latter heading in section 3.8. It focused on Year 2 children who had made a slow start in reading. Children in both groups made equal progress during the programme and maintained their gains three months afterwards, showing that ELS was as beneficial as Reading Intervention. This study did not address the question of whether some children even so made little progress.

That question was tackled by Hatcher et al. (2006b). They conducted an RCT on a modified version of Reading Intervention delivered by teaching assistants to small groups of Year 1 children selected as being in the bottom 8% of the population for reading. Half received the programme for 20 weeks, the other half for 10 weeks (and acted as a control group during the first 10 weeks). The 20-week group made better progress than the control group in the first 10 weeks, but after 20 weeks the control group had caught up. Both groups had maintained their gains on average when re-tested eleven months later. However, 21 of the total of 77 children had not made progress; indeed, their standardised scores had gone down, and they were therefore even further behind than at the outset. Detailed analyses showed these were more likely to be children with very low scores at the outset and/or to be receiving free school meals.

Next in the York series was another study aimed at preventing failure – see the entry for Phonology with Reading, section 3.26. The results for reading were small, and washed out after five months.

Two further studies were too small to be analysed here but represent continued commitment to the search for effective interventions for very low-attaining children.

Twelve eight-year-old children with severe and persisting reading difficulties who had taken part in the Hatcher et al. (2006b) study but had failed to make progress were followed up by Duff et al. (in press). They mounted a nine-week intervention incorporating reading, phonological and vocabulary training in the summer term of 2006, when the children were in Year 3. They had made almost no progress over the previous six months of regular classroom instruction. In the nine weeks of the intervention they made statistically significant gains in reading, phonological awareness and language skills, and these were maintained six months later. But they were still achieving well below average in reading and would need ongoing support.

In 2005 Goetz et al. (in press) studied 15 children with Down's Syndrome attending mainstream schools (14 primary, one secondary) who could read at least five words on the Early Word Recognition (EWR) test but scored 50% or less correct on a non-word reading test. The programme lasted 16 weeks, was delivered by their learning support assistants, who received further specific training, and was built on Reading Intervention and Jolly Phonics (Lloyd and Wernham, 1998), with additional speech-based work devised by a speech and language therapist. The children made gains in letter-sound knowledge and word recognition, and the gains were maintained five months afterwards.

Work in this tradition continues at the University of York, which has gained funding for a dedicated research facility and investigations to be conducted there.

References

Duff et al. (in press); Goetz et al. (in press); Hatcher et al. (1994, 2004, 2006b); Hatcher (2000)

3.30 Reading Recovery

Reading Recovery arose out of an extensive research project carried out in New Zealand by Marie Clay, who died while this (2007) edition was being prepared. Reading Recovery identifies children who are having difficulty in acquiring literacy skills at an early stage of their school career and aims to provide help before problems become consolidated. The programme is delivered for 30 minutes on a daily basis, by a specially trained teacher. The lesson consists of a series of activities, including reading two or more books, one familiar and one new. It encourages children to monitor their own reading.

Scheme

Reading Recovery is aimed at children who after one year of schooling show they are having difficulty with reading. In the UK, within schools which are thought to be in most need of the programme the children who are identified as being in the bottom 20% of the class in reading receive the programme – they are probably in the bottom 5-6% nationally. The selected children receive daily 30-minute individual lessons for up to 20 weeks from a specially trained teacher, who provides highly responsive instruction tailored to the needs of each child. Throughout the lesson the teacher's interventions, based on daily diagnoses, are carefully geared to identify and praise successes, promoting confident and independent behaviour. This ensures that a range of strategies are brought to bear whenever problems arise. Children leave the programme (are 'successfully discontinued' or, in more recent RR parlance, 'have achieved accelerated learning') when reading improves to the level of the average reading group in their class, enabling them to work in class without additional support. Children who are not successfully discontinued are referred for more detailed assessment and specialist help.

The first LA in the UK to introduce Reading Recovery was Surrey, in 1990 (Prance, 1992; Wright, 1992). In 1992, 20 other LAs in England and Wales received central government funding to introduce it, and it was later taken up by other LAs in England and Wales, and by all the Education and Library Boards in Northern Ireland (Gardner et al., 1997; Munn and Ellis, 2001). Central government funding ceased in England and Wales in 1995, leading to a period of decline in numbers of trained teachers, of LAs providing it, and of children receiving it. Every Child a Reader (undated but known to have been published in 2006, p. 9) reports that:

> In 2004–5 the programme was provided to 5,300 children in the UK and Ireland. It is very widely used in both Northern Ireland and in the Republic of Ireland, but in England the number of children involved has until recently been declining. Of 600 teachers who had been trained in Reading Recovery in England, only 60 were able to provide the programme in their schools in 2004–5.

Two of the LAs which did keep Reading Recovery going were Hackney (The Learning Trust – Hackney, 2005), where children who had received Reading Recovery have been achieving better than expected results in the Key Stage 1 and Key Stage 2 tests (but it was not possible to calculate impact measures from these data), and Stockport, which had a Reading Recovery-style programme called 'Third Wave in Stockport' running in 2002, and in 2006 had its own version of 'Every Child a Reader' (some data, too small-scale to analyse, were received from Stockport in both 2002 and 2006–07).

But then in 2005 a consortium of charitable trusts and businesses provided £4.5 million over three years, matched by the DfES, for a revived Reading Recovery initiative in England, called 'Every Child a Reader' (ECaR). In the first year, 2005–06, £1 million was allocated. This funded Reading Recovery training in several areas, including five London boroughs, plus an evaluation based in those boroughs and five others in London which provided a comparison group (and were to receive training in 2006–07, along with others elsewhere in England).

It is worth saying that, in the interim between the London and Surrey and ECaR studies, Reading Recovery changed considerably, to reflect international research, and now includes a large amount of phonological awareness and phonics.

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Evaluations

The original request for information for the 1998 version of this report produced more replies about Reading Recovery than about any other initiative. They constituted about a quarter of all the information received then, more was received in 2002, and in 2007 reports on a long-term follow-up of the 1997–98 cohort, on the new London evaluation, on ECaR across England, and on Reading Recovery across the whole of Britain and Ireland became available. Unfortunately, however, most of the reports received in 1998 and 2002 provided neither an impact measure nor data from which such a measure could be calculated. The only earlier reports which did provide such information were the Institute of Education, University of London (IoE) study of Reading Recovery in six London boroughs and Surrey (Sylva and Hurry, 1995a, b; Hurry and Sylva, 1998, 2007) – this was the only study analysed for the 1998 edition – and one stage of local data-gathering in Bristol (Fudge, 2001), which was added in 2002. These are now massively supplemented by the reports on the long-term follow-up of the 1997–98 cohort (Douëtil, 2004), ECaR in London (Burroughs-Lange, 2006; Every Child a Reader, undated but known to have been published in 2006) and on Reading Recovery across Britain and Ireland (Douëtil, 2006). The IoE and ECaR in London studies included carefully-chosen comparison groups, and the IoE study also an alternative intervention condition (Phonological Training; so-called in the 2007 article but Phonological Intervention in the earlier reports). All five of these studies are analysed in this edition. (A small amount of later information from Bristol provided in 2007 is not analysed because it is a small sample.)

None of these studies used an RCT design. However, early in 2007 the What Works Clearinghouse (2007a, b) in the USA produced a report on a meta-analysis of the five most rigorous studies on Reading Recovery, all conducted in the USA. This showed positive effects on both reading accuracy (word identification) and comprehension.

References

Clay (1979, 1985, 1993); Gardner et al. (1997); Munn and Ellis (2001); Prance (1992); The Learning Trust – Hackney (2005); What Works Clearinghouse (2007); Wright (1992)

(1) London and Surrey

The Hurry and Sylva (2007) article provides so much more, and more precise, methodological and statistical information than the earlier reports that it must now be considered the definitive account of this study.

The Phonological Training condition gave children additional tuition in the specific area of phonological awareness.

Between pre- and post-test the Reading Recovery group made significantly greater progress than both comparison groups in reading accuracy and reading comprehension; the Phonological Training group and their control/comparison groups did not differ in progress on these aspects. Also, the Reading Recovery group made significantly greater progress than the Phonological Training group.

At the one-year follow-up, the Reading Recovery children were no longer ahead of, but had still made significantly better progress than, the between-schools comparison group on both aspects, but had no longer made significantly better progress than the within-schools comparison group. And by this point the Phonological Training group had made significantly better progress than their between-schools comparison group on both aspects, but had still not made significantly better progress than their within-schools control group.

Also at the one-year follow-up, both Reading Recovery and Phonological Training groups were significantly ahead of their between-schools comparisons groups in spelling, but neither was ahead of its within-schools comparison/control group.

At the three-year follow-up, neither the Reading Recovery nor the Phonological Training group was significantly better in general than their respective control/comparison groups, the only exception being that the Phonological Training group had a significantly higher average score than their between-school comparison group on spelling.

However, within the Reading Recovery group, children who had been complete non-readers at the pre-test at age 6 did stay ahead of comparable children in the comparison groups – but this was not true of such children within the Phonological Intervention group. 'For the children who were not reading at all at 6 years old, Reading Recovery was more effective [for reading] at every follow-up point than for slightly better readers' (Hurry and Sylva, 2007).

But then again, at the three-year follow-up all groups were well behind national norms in both reading and spelling: '[I]t would appear that, in the long-term, neither of the interventions had allowed the children to overcome their poor start with reading' (Hurry and Sylva, 2007) – or, it should be added, to keep up in spelling.

However, for more positive follow-up findings, see the 1997–98 cohort and Reading Recovery in Britain and Ireland, below.

References

Hurry and Sylva (1998, 2007); Sylva and Hurry (1995a, b)

(2) Bristol

This local study contained 145 children – more than the main experimental group in either of the London studies. It showed a useful impact of Reading Recovery.

Reference

Fudge (2001)

(3) The 1997-98 cohort

No data were available on this cohort's attainment while in the programme. However, long-term follow-up data were available, and the samples were large (1,451 at the end of Key Stage 1 and 651 at the end of Key Stage 2). Children who had completed RR had much better than expected results at both stages.

Reference

Douëtil (2004)

(4) Every Child a Reader in London

The comparison group (N=147) made less than standard progress, and was therefore falling relatively further behind. The experimental group (N=87) made substantial to remarkable progress. In the light of the wash-out in the London and Surrey study it is right that ECaR in London has already planned a one-year follow-up for July 2007.

In the pre-budget statement in late 2006 it was announced that ECaR will be rolled out nationally, and in an answer to a Parliamentary Question on 22 January 2007, Jim Knight MP, (then) Minister of State for Schools and 14–19 learners, announced that work was under way 'to develop the ECaR model so that it is fully compatible with the recommendations of Jim Rose's review of the teaching of early reading, and explore the most cost-effective approaches so that a greater number of children can benefit from support'.

References

Burroughs-Lange (2006), Every Child a Reader (undated but known to have been published in 2006)

(5) Reading Recovery in Britain and Ireland

The sample here was very large (3566). It included the experimental sample from Every Child a Reader in London (but not the comparison group). There was a substantial gain in reading.

Reference

Douëtil (2006)

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3.31 Reciprocal Teaching

Scheme

The Reciprocal Teaching Method is a teaching approach first described by Palincsar (1982) and then further developed by her and Brown (Palincsar and Brown, 1984; Palincsar, 1986). They describe it as:

> A procedure… where teacher and student took turns leading a dialogue concerning sections of a text. Initially the teacher modelled the key activities of summarising (self-review), questioning (making up a question on the main idea), clarifying and predicting. The teacher thereby modeled activities: the students were encouraged to participate at whatever level they could. The teacher could then provide guidance and feedback at the appropriate level for each student.
> (Palincsar and Brown, 1984, p. 124)

The four activities are seen as having two functions, 'comprehension-fostering and comprehension-monitoring' (p. 121). Pupils are gradually encouraged to take over the teacher role as they gain confidence, and the whole approach is predicated on the idea that poorer comprehenders can improve by being shown and explicitly understanding and adopting good comprehenders' strategies.

Evaluation

There has been a large amount of research on the technique in North America – where Rosenshine and Meister (1994) did a meta-analysis on the 16 most rigorous studies and produced an effect size of 0.32 on standardised tests – but very little in the UK. No data were available in 1998, and only very small amounts from Westminster (see Greenway, 2002) and Haringey LAs (seven and 16 children respectively) in 2002; I used the Haringey data supplied by Christa Rippon but not the Westminster data. In 2007 Christa Rippon supplied data on 88 children from Haringey, and the analysis of those data has for this edition replaced those on the 16 children used previously. The results showed a useful gain in reading accuracy and a substantial one in comprehension.

References

Greenway (2002); Palincsar (1982, 1986); Palincsar and Brown (1984); Rosenshine and Meister (1994); and unpublished data supplied by Christa Rippon

3.32 RITA (Reader's Intelligent Teaching Assistant)

This section needs to be read in conjunction with sections 3.7 and 3.18 on Direct Phonics and Interactive Assessment and Teaching (IA&T).

Scheme

RITA is a computer-based literacy support system. Its authors describe it as follows:

> Interaction takes place in the HyperCard 2.3 environment on the Apple Macintosh computer… Output includes pictures, graphics and high quality 'synthesised speech' or digitised speech in addition to text.
>
> The teacher can specify 'activities', from a single session to a 'workbook' comprising a whole course unit… A single 30-minute session can… be pre-programmed as a series of up to three 'activities'… The teacher may elect to be present at any or all of these activities. For a more autonomous learner [it] is possible to let the computer take over the scheduling… or to allow the learner some responsibility for deciding what to do next.
> (Nicolson et al., 1999, p. 197)

Much of RITA was IA&T computerised.

Evaluation

The developers also evaluated the program, in a carefully designed experiment with Year 2 and Year 3 children comparing RITA against both ordinary classroom teaching (no-intervention control group) and IA&T. RITA was implemented in the same schools as IA&T had been the previous year, using the same teachers, same timetable and equivalent children. The data for IA&T were those from the same team's earlier evaluation of IA&T, used here as an 'historical alternative intervention' group. Reading and spelling were tested at the beginning and end of the intervention. The control group made hardly any gain in either reading or spelling. Both RITA and IA&T made substantial to remarkable gains in both areas, but the gains did not differ in either skill between groups. The researchers stress the interpretation that this shows that RITA was just as effective as IA&T; an alternative view would be that the technology added nothing.

Reference

Nicolson et al. (1999)

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3.33 SIDNEY (Screening and Intervention for Dyslexia, Notably in the Early Years)

Scheme

SIDNEY's aims are to:

- reduce the number of pupils who fail to learn to read during Key Stage 1 and hence the number of pupils who require high levels of resources to support access to the curriculum at Key Stage 2;
- reduce the number of pupils who develop associated behavioural and emotional difficulties as a result of their failure to learn to read effectively;
- improve the quality of teaching during Key Stage 1 by extending the knowledge and skills of teachers and assistants.

Hampshire primary schools are asked to screen all pupils in the last term of their Reception Year, (using either the Dyslexia Early Screening Test (DEST) or Lucid CoPS), to identify pupils who are likely to experience literacy difficulties. During their first term in Year 1, pupils so identified work through an intervention programme, which was written jointly by local advisers and educational psychologists. The intervention programme is designed to be used by a learning support assistant (LSA) for 15 minutes per day on a one-to-one basis. The aim is that pupils should attain the levels expected by the Primary National Strategy by the end of Year 1, term 1 (i.e. to be able to spell CVC words accurately, with correct letter formation).

The intervention programme is broken into prescribed lessons and is scripted to enable LSAs to carry out the programme with a minimum of training and support. It consists of two strands:

- the core route (multi-sensory, cumulative teaching of sound-symbol links, plus blending of phonemes);
- the phonological route (training in phonological awareness including rhyming, syllabification, blending and segmenting).

Many schools have developed their own practice in using the SIDNEY programme. Where schools have identified large numbers of pupils who require support, they typically work on a one-to-one basis with those at 'moderate risk' during the autumn term. These pupils often make rapid progress and by the end of the term are able to work with the rest of the class during word-level work without needing further individual support. This then allows time for the LSA to support those at 'high risk' on a one-to-one basis during the spring and summer terms.

Evaluation

The scheme was evaluated locally in the autumn term of 2004, that is, with children at 'moderate risk'. It showed a useful gain in reading and phonological skills; the test used was the Word Reading and Phonic Skills (WRAPS) test, which returns a combined measure of these areas.

References

Norgate and Bentote (2005), and unpublished data supplied by Roger Norgate

Contacts

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3.34 Somerset Self-esteem and Reading Project

This was a series of four studies all conducted by Denis Lawrence, who was at first a specialist remedial teacher, and then from 1974 to 1981 (see Lawrence, 1988, biographical note opposite title page) Chief Educationalist Psychologist in the county. He was convinced that low self-esteem had a detrimental effect on children's attainment, and that it was absurd to tackle only the low attainment.

Schemes

Lawrence's studies were specially-designed experiments rather than initiatives to which evaluations were added. The fourth study was on a large scale, involving 335 children in all; the others were much smaller. In each study, the children in the experimental group received some form of Rogerian self-esteem counselling plus a specific reading intervention. Otherwise the studies have in the main to be described separately.

Somerset (1)

Here the counselling was provided by a professional psychologist who was a remedial specialist (presumably Lawrence himself), and the specific reading intervention was the remedial teaching already provided within the school, which was mainly phonics. A comparison group received no extra intervention, and there were two alternative intervention groups: one received only counselling, while the other received only the remedial phonics teaching. Lawrence (1971, p. 120) gave a half-page description of the counselling, and summarised it as follows: 'This involved a responsible, sympathetic adult, with status in the eyes of the child, communicating to the child that he enjoyed his company.' The fullest account of Lawrence's approach and recommendations is in Lawrence (1988).

Somerset (2 and 3)

In each of these, there were only two groups. The children in the experimental groups received counselling plus remedial teaching, while those in the comparison groups received only remedial teaching (and were therefore alternative intervention, rather than no-intervention groups). The counselling appears to have been intended to be identical to that in the first study, except that it was provided by non-professionals: 'The head teacher of each school contacted a woman in the area whom he considered to be a suitable person for the experiment' (Lawrence, 1972, p. 49). These non-professionals were trained by 'the psychologist' (presumably again Lawrence himself).

Somerset (4)

There were four groups of pupils: a no-intervention control group, and three groups who all received DISTAR. One group received only that intervention, while the other two received in addition one of two 'therapeutic' interventions designed to boost pupils' self-esteem about reading.

The DISTAR-only group received instruction in the skills of reading through the Direct Instructional Teaching technique devised by Engelmann et al. (1969). (For the successor programme to DISTAR, see Corrective Reading, section 3.45.) The teachers involved in using DISTAR with this and the other two relevant groups were all trained in the technique by a manager of the scheme's UK promoters. The children were taught in groups of 6–10, according to the number identified in each school as low attainers, for one hour, three times per week. In this technique, children sit in a semi-circle within touching distance of the teacher. The lowest-attaining children are placed in the centre. They interact continuously with the teacher, learning word patterns out loud. The sequences are highly structured, and are taught until all children have mastered them.

The children in the experimental group receiving the first of the 'therapeutic' interventions in this study received DISTAR as above, plus counselling once a week for 20 weeks from one of 35 non-professionals. The children were seen in pairs, for 45 minutes each time. The counsellors were selected by the headteachers of the schools involved. They had four meetings beforehand at which they were given handouts on how to structure the sessions with games and activities. These had been designed by the experimenter, or were those described by Canfield and Wells (1976). The counsellors were also briefed on self-concept theory and on the establishment of empathy as described by Rogers (1975) and 'modelling'

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as described by Bandura (1977). The essence of the intervention was an accepting and non-judgemental relationship between counsellor and children.

The group receiving the second of the 'therapeutic' interventions received DISTAR as above, plus a weekly drama session designed to enhance self-esteem. Groups varied in size from seven to 15. The sessions lasted about 45 minutes, and were taken by the County Adviser for Drama. They were structured to allow the children to experience success, and included role-playing as 'experts'; for example, they would be on an imaginary journey and would each be given a different expert role. The rule was that no criticism of experts was allowed. The drama condition was intended to illustrate an even simpler method of delivering self-esteem improvement than the delivery of counselling by non-professionals.

Evaluations

These were all carried out by Lawrence. The following summary gives the main results for each study, and then some overall conclusions.

Somerset (1)

Professional counselling only was effective. The evidence for counselling plus remedial phonics teaching, and for remedial phonics only, was less clear-cut. Professional counselling plus remedial phonics was no better than counselling only or remedial phonics only; but professional counselling only was better than remedial phonics only or no intervention and equal to professional counselling plus remedial phonics.

Somerset (2)

Counselling by non-professionals plus remedial teaching was no better than remedial teaching alone.

Somerset (3)

Counselling by non-professionals plus remedial teaching was better than remedial teaching alone.

Somerset (4)

The two 'therapeutic' conditions (counselling by non-professionals plus DISTAR, drama plus DISTAR) did not differ, and were better than DISTAR only and no intervention, which also did not differ.

Overall

Counselling by a professional alone was effective in study 1.

Counselling by non-professionals plus a specific reading intervention (remedial teaching, DISTAR respectively) was effective in studies 3 and 4, but seemed less so in study 2 (where the reading intervention was also remedial teaching).

Drama teaching designed to boost self-esteem plus DISTAR was effective in study 4.

The specific reading intervention alone was ineffective in study 3, reasonably effective in study 4 (though no more so than no intervention, and significantly less so than the therapeutic interventions), and not particularly effective in study 1 (where it was phonics) and study 2.

Normal classroom provision was ineffective in study 1.

Finally, the conclusions just stated are distinctly less strong than the claims made by Lawrence. Nevertheless, he did show that self-esteem counselling by non-professionals plus a specific reading intervention can be effective, and that the boost to self-esteem can also (and perhaps more cost-efficiently) be delivered through appropriate drama teaching. The need for motivational factors in poor reading to be re-explored is heightened by the recurrent anxiety over boys' low achievement compared to girls, and the possibility that part of the reason may be boys' negative attitudes to reading and writing.

Since Lawrence, research on boosting self-esteem and literacy concurrently seems to have languished. The ENABLE programmes (section 3.9) mention self-esteem as a focus but provide no data on it. The Every Child a Reader in London study using Reading Recovery (sections 3.30 and 3.59) has outcome data on self-confidence but does not seem to have targeted this. The only more recent project with an overt focus and data on self-esteem appears to be Headlam Wells (2000). She used an approach called Pyramid (see The National Pyramid Trust for Children, www.nptrust.org.uk) with 28 children (16 experimentals, 12 in a comparison group) – too small a sample to be analysed here – in two schools in the London Borough of Wandsworth for her MSc in Educational Psychology dissertation project. Self-esteem was the main focus, and any impact on reading would have been a bonus. Though the experimental group did not make statistically significantly greater progress than the comparison group (p. 41), the investigation was a valid one and deserves to be followed up.

References

Bandura (1977); Canfield and Wells (1976); Engelmann et al. (1969); Lawrence (1971, 1972, 1973, 1985, 1988); Rogers (1975)

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3.35 Sound Discovery®

Scheme

Sound Discovery® is a synthetic phonics programme for the teaching of reading, spelling and writing developed by Dr Marlynne Grant, educational psychologist in South Gloucestershire, and first published in 2000 (for details, see www.syntheticphonics.net). The children are taught grapheme-phoneme correspondences and the phonic skills of blending and segmenting, and how to use this knowledge in reading and writing. It is delivered through three sessions a week of Snappy Lesson®, fast-paced and consisting of appropriate multi-sensory activities, and originally intended to be delivered to small groups of children. There are seven steps. Step 1 is based on the letters of the alphabet, Step 2 introduces some consonant and vowel digraphs, and the main alternative vowel and consonant spellings are covered in Step 3, etc. As originally used in South Gloucestershire it is a Wave 1 programme and therefore not analysed here; however, extensive data have been gathered on it there over ten years.

Evaluations

Data on Sound Discovery® as a catch-up programme were available from a study in Norfolk in 2005 and from a study in one large middle school in Bedfordshire in 2005–07. For comprehension, the Norfolk study found a substantial gain, the Bedfordshire study (Year 6) only standard progress. (The Bedfordshire Year 5 group was not tested on reading.) In spelling, the Bedfordshire Year 6 group made only standard progress, the Norfolk group modest progress, and the Bedfordshire Year 5 group useful progress.

References

Grant (2000), Worsley (2005b), Wainwright and Grant (1999), unpublished data supplied by Jo Padbury via Marlynne Grant

Contacts

www.syntheticphonics.net
info@syntheticphonics.net

3.36 Sounds~Write

Scheme

Sounds~Write was developed by Susan Case, David Philpot and John Walker. It starts from what all children know from a very early age – the sounds of their own language. From there, it teaches them in carefully sequenced steps how each of the 43 or so phonemes of English can be spelt.

The words used in the teaching process and the conceptual knowledge of how the alphabet code works are both introduced from simple to complex, in accordance with the fundamental principles of psychological learning theory. For example, at the start, simple, mutually implied (one sound, one spelling) one-syllable CVC words only are introduced. As the programme progresses, the complexity of one-syllable words is increased through a variety of VCC, CVCC, CCVC, CCVCC, and CCCVC words before dealing with the most common consonant digraphs (<sh, ch, th>, for example), followed by the vowel digraphs and, finally, how to read and spell polysyllabic words.

Evaluation

Staff at a two-form-entry primary school in Northamptonshire were concerned that children were not making sufficient progression using their existing scheme, Progression in Phonics (PiPs). They sent one Year 1 teacher to be trained on Sounds~Write in autumn 2005, and she used it with her class while the other continued with PiPs. After five weeks the Sounds~Write class had made substantial progress in both reading and spelling, while the PiPs class had made roughly standard progress. The PiPs class then switched to Sounds~Write.

Reference

www.sounds-write.co.uk/smallstudy.asp

Contact

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3.37 SPELLIT

Scheme

SPELLIT stands for Study Programme to Evaluate Literacy Learning through Individualized Teaching. It was a research and development project funded by the DfES, the Community Fund, WHSmith, and the Dyslexia Institute (now known as Dyslexia Action). Within the programme of work were a number of distinct but interconnected projects concerned with providing support for young children experiencing difficulties in literacy learning. The main aims of these projects were:

- to provide a scientific evaluation of structured multi-sensory teaching;
- to explore ways of supporting parents to enable them to help their children learn;
- to work in partnership with Local Education Authorities in order to help disseminate good practice.

SPELLIT's programme of activities included:

- Development and publication of new learning programmes and materials
- Development and delivery of structured programmes of support for parents to support their children at home
- Delivery of training courses to participating schools
- Observational study of children in schools and in individual teaching sessions
- Interview and feedback meetings with participants – pupils, parents, tutors, class teachers
- Production of Practical Guidance and Case Studies to inform wider educational practice
- Exploration of the application of the support programmes with other groups who are socially disadvantaged by literacy difficulties

The pupils involved were aged about seven at the start of the study, and took part in the programme over Year 2–3 or Year 3–4. There were three different learning programmes:

- Structured multi-sensory teaching using the Dyslexia Institute's approach, twice weekly over a 24-week period in sessions each lasting one hour – this was in effect the 'experimental' condition
- A Home Support Programme consisting of activities and exercises to be done at home for around 15 minutes per day, for five days per week over a 30-week period – in effect an 'alternative intervention'
- A Combined programme involving 1 hour per week of structured teaching for 24 weeks and Home Support Activities in 15-minute sessions, three times per week over a 30-week period – also in effect an 'alternative intervention'

There was also a No Teaching comparison group of children who received no additional support but went on to receive a programme involving structured teaching later.

Evaluation

The programme was evaluated by its developers at the Dyslexia Institute in York. For reasons beyond the researchers' control, the Combined programme did not operate as planned and provided no data, leaving the experimental, comparison and alternative intervention (Home Support) groups. The comparison group made less than standard progress. The Home support group progressed at exactly the standard rate. The experimental group made more progress than this, but not significantly.

References

Rack and Hatcher (2002a, b)

3.38 The Early Reading Research

Scheme

This programme is the brainchild of Jonathan Solity, who developed it over several years while working at the University of Warwick. It was originally intended as an all-year Wave 1 programme for Key Stage 1, but has more recently been used as a Wave 2 intervention in Key Stage 2. In Key Stage 1 it addresses the needs of children by using specific focused strategies in whole-class teaching. It works from the principle that the effectively-trained classroom teacher can provide the specific support for most children, given coherent and targeted interventions at the point of need, by building inclusion through differentiated support. This holistic programme is well worth consideration when linked to an extensive training programme for teachers.

A Key Stage 3 version, The Secondary Reading Research, was piloted in 2003–04 (see section 3.53).

Evaluations

Jonathan Solity has carried out extensive evaluations of his programme as a Wave 1 scheme, and in recent publications focuses on the bottom 25% of children. The data analysed in the Appendix are from (1) comparing the bottom 25% of children in TERR schools with the bottom 25% in comparison schools in Years 1–2 – the TERR group made only standard progress, but the comparison group fell much further behind; (2) studies of its use as a Wave 2 intervention in Years 3–6 – the programme groups made modest gains (there were no comparison groups).

References

Solity et al. (2000), Solity and Shapiro (2006, in press), and unpublished data supplied by Jonathan Solity

Contact

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3.39 THRASS (Teaching Handwriting, Reading and Spelling Skills)

THRASS is a structured multi-sensory literacy programme which teaches children about letters, speech sounds (phonemes) and spelling choices (graphemes). It is divided into the three main areas of handwriting, reading and spelling. It increases understanding of the way the English language is structured, with 44 phonemes, of which 20 are vowel sounds and 24 are consonant sounds. Children learn immediately that the same sound can be represented by different letters or groups of letters (graphemes), eliminating any confusion.

Scheme

THRASS was developed by Alan Davies, an educational psychologist then at Manchester Metropolitan University. The programme has been continuously developed and revised, and in 1997 became available on computer.

Davies found that the problem many people have while learning to read and write is that there are 44 sounds or phonemes in most well-known accents of English, yet only 26 letters to represent them. Therefore, the central feature of the scheme is that children are taught explicitly about the variety of grapheme-phoneme and phoneme-grapheme correspondences of English. Teachers are given training in the use of materials (video, workshops, audio cassettes, computer program and an instruction booklet). A typical THRASS lesson might include identifying upper and lower case letters by name, and writing each letter while listening to verbal instructions. Children are introduced to common sequences such as days of the week and seasons. During each lesson new learning is introduced, but there is always practice of material already covered. Children are encouraged to work together, while the teacher provides positive encouragement and reinforcement for correct responses.

Evaluation

Though THRASS has been extensively studied in the UK, Australia, the Caribbean, Botswana and South Africa, almost all the work has considered its use as an initial, across-the-board scheme, and there is little evidence on its value as a 'catching-up' intervention. In the 1998 edition, the entry on THRASS was based on an investigation mounted in Sheffield in 1994–95 (Johnson, 1995) – but the version of THRASS used in that evaluation has long been superseded. For the 2002 edition, that analysis was replaced by data from the 'Special Initiative to Enhance Literacy Skills in Bridgend' conducted there with pupils in Years 3–8 in 1998. Both reading and spelling were assessed. The results showed useful to substantial impact on reading for all year–groups, and on spelling in Year 3, but not on spelling in Years 4–6, where the children made standard progress. (For Years 7–8, see section 3.54.) For this edition, new data from an evaluation in Hampshire in 2005 were provided, and an analysis of those data has been added in the Appendix. There was a useful gain in reading (spelling was not assessed).

References

Johnson (1995); Matthews (1998); unpublished data supplied by Roger Norgate via Alan Davies

Contact

THRASS (UK) Ltd, Units 1–3 Tarvin Sands
Barrow Lane, Tarvin, Chester CH3 8JF
www.thrass.co.uk

3.40 Time for Reading

Do volunteers really make a difference to children's progress in reading? This intervention was designed as part of a research project investigating this question.

Scheme

Time for Reading was designed and evaluated by staff at the University of Sunderland. The evaluators describe it as:

vary[ing] from other volunteer studies in several ways:

1. the project was designed to operate with children of 4 and 5 years of age whose schools were located in areas of particular socio-economic disadvantage. It was hypothesised that work with younger children from such communities might avoid the negative impact of an experience of reading failure;
2. the focus of the volunteer inputs concerned the development of the children's phonological awareness, letter knowledge, the gaining of experience of a wide range of reading-related behaviours and the heightening of the enjoyment of stories. All of these, it was considered, were likely to be particularly important at the early stages of reading acquisition;
3. a detailed training programme was supplemented by a specially prepared manual for volunteers and teachers … It was considered that the provision of detailed training and guidance might help to overcome a major reason for the failure of the intervention evaluated by Loenen's (1989) study;
4. ongoing supervision, monitoring and management was provided by the research team in collaboration with senior staff in the volunteer schools.

(Elliott et al., 2000, p. 232)

The intervention took place over six months when the children were aged 4–5. A total of 31 volunteers worked with 68 children.

Evaluation

Testing was conducted at the beginning and end of the intervention (two phonological awareness tests, of rhymes and initial phonemes), and then again 2½ years later ('3-year follow-up') (reading and spelling), when the children were aged 7–8 (Year 3). Both the participating children and a randomly-assigned control group were studied. There were no significant differences between the groups in either test used either at the end of the intervention or at the 3-year follow-up.

The evaluators put forward several possible reasons for the non-significant results. The length of the intervention may have been too short; the children may not have received the most appropriate reading programme; the programme may have been 'overly comprehensive'; the tutors may not have grasped important aspects of book sharing; the children with most need often received less input because the tutors found it difficult to persevere with them; many volunteers did not gain a sophisticated understanding of the programme; and 'liaison between teachers and volunteers proved rather superficial'. The findings need to be judged alongside those from various Better Reading Partnerships, where volunteers did make a difference. However, a systematic review of randomised controlled trials on volunteers helping children to read (Torgerson et al., 2002) found only a modest and non-significant effect size (0.19).

References

Elliott et al. (2000); Torgerson et al. (2002)

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3.41 Toe by Toe®

Scheme

Keda Cowling worked on this scheme for over 25 years. It is a highly systematic page-by-page and step-by-step series of activities in one book, delivered one-to-one, with instructions for the 'coach' provided for each activity. It deliberately takes learners right back to the beginning of phonics and works up from there, based on the observation that many learners with difficulties seem never to have got the hang of phonics. Unusually, many of the stimuli are non-words, in order to focus learners' attention solely on decoding and avoid guessing based on any other 'cue'. It is suitable for any child (or adult) with reading difficulties, especially those who have been diagnosed as having specific learning difficulties. The author states that parents, special needs teachers, and support, teaching and classroom assistants can all use the scheme effectively. It is intended that learner and coach should work through the entire scheme, however long that takes, and then graduate to simple reading books. Besides being used in many schools, it is in widespread use in prisons and Young Offender Institutions and with young people being supervised in the community.

Evaluation

A small amount of quantitative data on the scheme's effectiveness at primary level was obtained from the providers. The results suggest that, when delivered meticulously, this programme can achieve useful gains.

Reference

Unpublished data supplied by Keith Taylor

Contacts

Keda Cowling and Harry Cowling
www.toe-by-toe.co.uk

B. Reading and spelling schemes – secondary level

In addition to those listed in this section, there are data for secondary-age pupils mixed in with those for primary pupils in the following schemes listed in the previous section: AcceleRead AcceleWrite, Paired Reading, Phonological Awareness Training, Reading Intervention.

3.42 Academy of Reading®

Scheme

For a description of the programme, see section 3.2.

Evaluation

One very useful set of UK data was found, from a pilot study in five Education and Library Board areas in Northern Ireland carried out in 2003–04. The data were gathered by teachers in the schools and analysed by researchers at AutoSkill in Ottawa. Modest gains were found for comprehension in Northern Ireland Years 8–9 (= England and Wales Years 7–8).

Reference

Loh and Stanton (2004)

Contact

www.autoskill.co.uk/

3.43 Better Reading Partnerships

Scheme

For general details of Better Reading Partnerships, see section 3.4.

Evaluation

The only secondary data available were for Years 7–8 in Derbyshire. Both gains were substantial.

Reference

Taylor (2000)

3.44 Catch Up Literacy (formerly known as Catch Up, then The Catch Up Project)

Scheme

For general details of Catch Up Literacy, see section 3.5. It is a one-to-one literacy intervention for struggling readers aged 6-14.

Evaluations

The Key Stage 3 version of Catch Up Literacy was piloted in 2002–03 and rolled out from 2003–04. However, it seems that in only one school has an attempt been made to compare the performance of a group of pupils receiving this version with another group receiving an alternative intervention ('a matched time programme devised by their classroom teachers'), and here the samples were too small to be analysed (experimental group 8, alternative intervention group 12). The investigator (Beverley, 2004) had originally allocated 26 pupils randomly between the two groups but encountered severe data-gathering problems (one pupil was permanently excluded, another broke a leg, several were so often excluded from lessons for disruption that they did not receive an adequate number of Catch Up Literacy sessions). Judgements of the effectiveness of this programme at Key Stage 3 therefore rest on data from one-group pre-test/post-test studies.

In 2007, outline aggregated data were received for almost 7000 pupils in Years 2–9 in 24 LAs across England and Wales, but more detailed aggregated data or pre- and post-test data at individual level were received for only various subsets. The following selection was made from the more detailed data at secondary level: data on 107 pupils in 12 schools in three LAs (Barnsley, Hampshire and Powys). They made only just over standard progress.

References

Beverley (2004) and unpublished data supplied by Julie Lawes

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3.45 Corrective Reading

Scheme

Corrective Reading is published by McGraw-Hill under the SRA imprint, and is the linear successor to DISTAR (see Somerset (4), section 3.34). It aims to provide intensive intervention for students who are reading one or more years below their chronological age. The materials come in three strands, Decoding, Comprehension and Workbooks, and in four levels within each strand. The Decoding strand moves up from word attack (65 lessons) through two levels of decoding strategies (65 lessons each) to skill applications (125 lessons). The Comprehension strand moves up from 'Thinking Basics' (60 lessons) through two levels of comprehension skills (60 and 65 lessons) to 'Concept Applications' (140 lessons).

Evaluation

The only data available came from one secondary school in Kent, which adopted it in September 2006 'as a way of radically addressing the very low literacy levels of a large number of [its] students on entry'. The pupils received six programme lessons a fortnight delivered by teachers and teaching assistants. There was a substantial improvement in reading.

References

Kirby (2007), www.mcgraw-hill.co.uk/sra/correctivereading.htm

Contact

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Maidenhead SL6 2BT
Telephone 01628 502 730
Fax 01628 635 895
sra_info@mcgraw-hill.com

3.46 ENABLE-PLUS (KS3)

Scheme

For general details of ENABLE-PLUS (Key Stage 3), see section 3.9.

Evaluation

The Key Stage 3 evaluation analysed in the Appendix was carried out by the authors of the scheme. It showed substantial gains.

References

Bowen (2003) and unpublished data supplied by Phil Bowen

3.47 Integrated Learning Systems: the National Council for Educational Technology study

Scheme

For details of the programme, see section 3.17.

Evaluations

For most details of the evaluations, see again section 3.17.

(1) Mainstream, Phase II

In Phase II of the project (1994–96), as at primary level, the result at secondary level was unimpressive: no overall benefit compared to comparison groups. One exception was noted at secondary level: a school where the ILS group did significantly better than the comparison group.

References

NCET (1994, 1996); Underwood (1997); Underwood and Brown (1997); Underwood et al. (1994)

(2) Mainstream, Phase III

In this Phase (1996–97), all the differences between experimental and comparison groups were small, but some reached statistical significance simply because the samples were large:

- in Year 8, the experimental group made marginally greater progress than the comparison group;
- in Year 9 and Year 11 (Durham study), the comparison group had marginally greater attainment than the experimental group;

but in Year 9 and Year 11 (Leicester study), there was no discernible difference between the groups.

References

BECTa (1998); Underwood (1997); Underwood and Brown (1997)

(3) For pupils with low attainments in reading

See again the comment in section 3.17.

3.48 Literacy Acceleration

As the Head of learning support in a comprehensive school, Tony Lingard became sceptical of the idea that secondary pupils with special needs should receive support mainly or exclusively within the mainstream classroom; he felt they were being left to struggle and falling further behind. His reading of 50 years of research on literacy interventions convinced him that dedicated small-group provision would be more effective, and he put this to the test.

Scheme

Pupils followed an individual programme, selecting their own reading books, with guidance, from a wide range of material and according to their interests: 'If a student wanted to labour through a difficult book on fishing, it was possible for him or her to learn the words one page at a time; if a student was fanatical about Dennis the Menace, he or she could read the Beano' (Lingard, 1994, p. 181). They read silently in school for at least 20 minutes a day, and also read aloud to an adult every day. They were taught both phonic and psycholinguistic techniques for tackling unknown words. Parents were asked to read to their child every day at home, and merit marks were given for individual reading at home recorded in their reading records. High levels of parental involvement were achieved overall, but pupils who were not heard reading at home were given extra individual tuition in school. Each week the pupils listened to a taped book while reading the text, and were then encouraged to choose that book for individual reading.

Spelling was taught in small groups by teachers or ancillaries using teacher-generated word lists containing words with common letter strings not necessarily representing the same sound(s). The Look – Cover – Write – Check technique was used, and spellings were tested in three or four 2-minute sessions every week; there was much recapitulation using different activities. A few pupils who required more intensive help were given this individually.

Each week pupils produced a piece of free writing which was redrafted with help. 'All Humanities work was specifically presented in such a way as to promote literacy' (Lingard, 1994, p. 181), but no further details are given.

Two of the six additional lessons each week (i.e. over and above normal English lessons) had an additional support teacher; four had two ancillary assistants.

Lingard (1994) also provides an unusually detailed account of the 'normal' curriculum followed by his comparison groups: it was very ordinary fare.

The above account applies to the first two of Lingard's three studies. The description of the third is virtually identical, but adds two important details: pupils who were non-readers were first taught a sight vocabulary of about fifty words using flash cards before being given their first reading book; and every effort was made to build up their self-esteem by giving praise and encouragement, and by being placed only in situations where they were likely to succeed.

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Evaluations

Lingard (1993, 1994) carried out two studies for his PhD, and a third a few years later (Lingard 1997). The first two had comparison groups, the third did not. The first ran for two complete school years, the others for one (but only the data for the first half of the second study could be used for analysis here).

In the first study, the experimental group made modest-to-useful gains in reading and spelling in the first year, and standard progress in the second. Meanwhile, the comparison group had fallen further behind in both years.

In the second study, the experimental group made a substantial gain in reading and a modest gain in spelling. Meanwhile, the comparison group had made modest gains in both. The gains in spelling were identical, and any statistical tests would come out non-significant.

In the third study, the experimental group made substantial or even remarkable gains in reading, and modest gains in spelling.

References

Lingard (1993, 1994, 1996a, b, 1997a, b, 2000, 2005)

3.49 Philosophy for Children

Scheme

In this case, the method of Philosophical Enquiry was based on the philosophical novel Harry Stottlemeier's Discovery by Matthew Lipman, who devised Philosophy for Children, but it can in principle be applied to any such text, or to any ethical conundrum. There is an organisation dedicated to the approach: SAPERE (Society for the Advancement of Philosophical Enquiry and Reflection in Education). SAPERE is Latin for 'to know, to be wise' and is the root of (homo) sapiens and the English word 'sapient'.

Haynes (2002) summarised the process of a routine philosophical enquiry in the classroom in nine steps:

- getting started – begin with a relaxation exercise, agree rules of interaction;
- sharing a stimulus to prompt enquiry;
- pause for thought;
- questioning – the children think of interesting or puzzling questions;
- connections – making links between the questions;
- choosing a question to begin an enquiry;
- building on each other's ideas – in this stage the teacher has to strike a balance between encouraging the children to follow on from each other's ideas and allowing related lines of enquiry to open up;
- recording the discussion – in whatever form;
- review and close – summarising, reflecting on the process, whether minds were changed, etc.

In one approach at least, each contributor must begin his/her contribution by explicitly acknowledging something positive about the previous speaker's contribution, even if s/he then proceeds to disagree. Standard questions are 'What do you mean by …?' and 'How do you know?'

The experimental group received 27 hours of philosophy sessions spread over eight months. The comparison group received extra English lessons.

Evaluation

The only quantitative evaluation appears to be one carried out in one secondary school in Derbyshire in 1992–93. Though small-scale (total N=32) it had a reasonably strong matched-groups design, and a modest effect size showing that the experimental group had made a significantly greater gain in reading than the comparison group. Given that the main focus was philosophy, the benefit for reading is an intriguing 'bonus' effect.

References

Haynes (2002), Lipman (1981, 2003), Lipman et al. (1980), SAPERE (2002), Williams (1993)

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3.50 Read Write Inc. Fresh Start (formerly known as rml2)

Scheme

This is Ruth Miskin's secondary and upper Key Stage 2 (Years 5–8/9) phonics programme. For general details, see section 3.28.

Evaluations

A fair amount of data was available for Read Write Inc. Fresh Start at secondary level. The DfES commissioned an evaluation in 2002–03 (Brooks et al., 2003). There were considerable difficulties in gathering quantitative data (though substantial qualitative fieldwork data were gathered), so that no comparison group data were obtained (the target had been 300 pupils) and, instead of the planned 500 pupils in what were then called rml2 programmes, data were eventually gathered on 264 pupils for reading and 132 for spelling. Since not all the eight schools involved used the same tests, data are analysed here for 156 pupils for reading and 96 for spelling. The results showed a modest relative improvement in reading but only standard progress in spelling.

Further data were available from one secondary school in Leicester (Lanes et al., 2005) and another in Cornwall (unpublished data supplied by Rosemary Austin). Data were gathered on 63 and 29 pupils respectively. The results showed a substantial improvement in reading accuracy but less than standard progress in spelling (Leicester), and a substantial improvement in reading comprehension (Cornwall).

References

Brooks et al. (2003), Lanes et al. (2005) and unpublished data supplied by Rosemary Austin

3.51 Sound Training for Reading©

This scheme was developed by Katy Parkinson in Middlesbrough.

Scheme

Pupils, in groups of four, attend six 1-hour sessions over a period of six weeks. The delivery is very intensive and very repetitive using multi-sensory teaching methods. The pupils are explicitly taught syllabification. All tasks must be completed accurately, fluently and automatically in order to progress with reading.

Pupils are given instruction on short and long vowel sounds along with an explanation of open and closed syllables.

Task 1 – Syllable tasks
The group has to read, at speed, a pack of syllable cards and then spell selected syllables. Speed and accuracy are recorded for both these tasks.

Task 2 – Word-building tasks
Pupils are provided with packs of syllables from which they build Key Stage 3 subject words. The pupils listen to the target word being spoken, count the number of syllables within the word, select the syllable cards and build the word. In turn they read the words and discuss definitions.

Task 3 – Speed reading
Pupils read from a pack of cards which have been colour-coded, e.g. in the word 'condensation' the second and fourth syllables are printed in red.

Tasks 1, 2 and 3 are timed and completed each week using different target words.

Task 4 – Prefixes, suffixes and root words
Towards the end of the programme pupils work on packs of words containing prefixes and suffixes and discuss the effect they have on the meanings of the root words.

Evaluation

This was carried out by the author in one secondary school in Middlesbrough. The experimental pupils made a modest gain in reading, but meanwhile the comparison group fell steadily further behind, so that the experimental group's gain was significantly greater than the comparison group's.

Reference

Unpublished data supplied by Katy Parkinson

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3.52 The Accelerated Reader

Scheme

The Accelerated Reader is a computerised program on which pupils assess their own reading comprehension after reading any one of (in 1999) 13 000 titles on the software manufacturer's list. Pupils select their own books and work at their own pace. After reading a book they take a multiple-choice comprehension test on it – but only once; taking the test again on the same book is not allowed. The computer scores the test, up to the maximum for each book – the maximum depends on the book's length and difficulty – and provides the teacher with analyses of scores for individual pupils, and indications of areas of weakness. Ideally, there should be about an hour's reading per day, half individual and half listening to the teacher read.

Evaluation

Following several evaluations in the United States, Vollands et al. (1999) mounted two small-scale studies in different schools in severely deprived areas of Aberdeen. The data analysed here were from the Edinburgh reading comprehension test; the scores generated within the program would not have permitted calculation of an impact measure. The first study showed a substantial improvement in comprehension, the second a very small one.

Reference

Vollands et al. (1999)

3.53 The Secondary Reading Research

Scheme

This is the Key Stage 3 version of Jonathan Solity's The Early Reading Research (see section 3.38). The SRR pupils were withdrawn for three 15-minute teaching sessions a day. They were taught by classroom assistants who had been trained through a series of half-day workshops. The content of the framework at Key Stage 3 was identical to the TERR framework for children at Key Stage 1. The comparison group was taught through the schools' usual provision for low-attaining pupils in Key Stage 3, which was largely daily small-group sessions of approximately half an hour.

Evaluation

The author conducted a pilot evaluation in three schools in 2003–04. Both groups were making at best standard progress, and in some respects were slipping further behind. However, the TSRR pupils made better gains than the comparison group, and were therefore getting less far behind.

Reference

Unpublished data supplied by Jonathan Solity

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3.54 THRASS (Teaching Handwriting, Reading and Spelling Skills)

Scheme

For main details of THRASS, see section 3.39.

Evaluation

Data for THRASS in Key Stage 3 (Years 7–8) come from a study carried out in Bridgend in 1998. Both reading and spelling were assessed. The results showed remarkable impact on reading accuracy and comprehension, and modest gains in spelling, for both year groups.

Reference

Matthews (1998)

3.55 Toe by Toe®

Scheme

For a description of the scheme, see section 3.41.

Evaluation

A fairly large amount of quantitative data on the scheme's effectiveness in Year 7 was obtained from a recent study in West Dunbartonshire. The results suggest that, when delivered meticulously, this programme can achieve useful gains.

Reference

MacKay (2006)

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C. Schemes for improving writing

Relative to the previous edition, there are only three additional studies on improving writing more generally, namely, Further Literacy Support and two Reading Recovery studies, Every Child a Reader in London and RR across Britain and Ireland. FLS and RR across Britain and Ireland were so large that they massively increase the amount of evidence, and ECaR in London has a large effect size. The other schemes considered in this section are Family Literacy and Paired Writing.

3.56 Family Literacy

Evaluation

The evaluation of the Basic Skills Agency's Family Literacy Demonstration Programmes (see section 3.10) included assessments of the emergent or early writing of all the children in the study – 362 at the outset (when the children's ages ranged between 3:00 and 6:11) and smaller numbers at the end of the courses and at three follow-up points. The assessments were made on a seven-point scale which was empirically derived from analysis of the several hundred scripts involved (expanded to a 12-point scale at the final follow-up). The children made significant gains, which were judged by the evaluators to be better than would have been expected.

References

Brooks et al. (1996, 1997); Gorman and Brooks (1996)

3.57 Further Literacy Support

Scheme

For details of Further Literacy Support, see section 3.13.

Evaluation

The experimental group made a much greater gain than the comparison group during the programme, and had maintained their lead a year later, at the end of Year 6. At that point the experimental group also had good Key Stage 2 results (these data were not collected for the comparison group).

References

Beard et al. (2004, 2005, 2007)

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3.58 Paired Writing

Scheme

Paired Writing is another in the suite of innovations devised and researched by Keith Topping and colleagues (see Cued Spelling and Paired Reading, sections 3.6 and 3.21). He (Topping, 2001, pp. 141, 144) describes it as follows:

> Paired Writing… is a framework and set of guidelines to be followed by pairs working together to generate a piece of writing for a purpose. It gives a supportive structure to scaffold interactive collaborative behaviours through all stages of the writing process…

[It] consists of	
6 STEPS	
+	
10 Questions	(Ideas)
5 Stages	(Drafting)
4 Levels	(Editing)

As with Cued Spelling, Topping stresses that Paired Writing 'is a lot simpler than it looks'. And again as with Cued Spelling and Paired Reading, children are provided with a flowchart as an aide-mémoire – this is downloadable from the website. On each occasion in each pair, one child has the task of writing ('the writer'), while the other supports ('the helper').

Evaluations

Topping and colleagues have carried out two well-designed and well-executed, though small, randomised controlled trials on Paired Writing.

Sutherland and Topping (1999) studied two groups of 16 children in P4 (equivalent to Year 4) in one Scottish primary school, with two equivalent groups of 16 in the same classes in the same school who did not receive Paired Writing training. One experimental group had helpers ('tutors') of the same ability (and swapped roles at intervals), the other had helpers of different ability (and did not swap roles). The cross-ability group made a significant gain during the intervention, while the same-ability group did not (at least in absolute terms – this group's control group's post-test score declined so much that the same-ability group's post-test score was significantly better).

Yarrow and Topping (2001) studied 13 children in one P6 class (equivalent to Year 6) in a Scottish primary school, plus 13 of their classmates as a comparison group. The experimental group contained both writers and helpers; their data are analysed together (as the 'Interaction' group) in the Appendix because the groups would otherwise be too small. The Interaction group made significantly more gain than the No Interaction control group.

References

Sutherland and Topping (1999); Topping (1995, 2001); Yarrow and Topping (2001)
www.dundee.ac.uk/eswce/specialist-centres/cpl/

3.59 Reading Recovery

Scheme

For main details of Reading Recovery, see section 3.30.

Evaluations

Two of the RR studies analysed here gathered writing data: ECaR in London, and RR across Britain and Ireland. In ECaR the experimental group (N=87) made a much larger gain in writing vocabulary than the comparison group (N=147); in RR across Britain and Ireland the KS1 writing results of 1,076 children in England were considerably higher than could have been expected from their levels in reading when they entered RR.

References

Burroughs-Lange (2006), Douëtil (2006), Every Child a Reader (undated but known to have been published in 2006)

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Chapter four

Comments on the evaluations

4.1 Schemes not included

A number of schemes on which information was gathered or available were not included in the analysis, for various reasons:

- A further study in the Somerset self-esteem series (Lawrence and Blagg, 1974) was too small to be included. Six children in an experimental group received counselling from non-professionals plus board games designed to enhance reading; six in a first alternative intervention (AI) group received counselling from non-professionals only; six in a second AI group received the board games only; and six in a third AI group played non-reading games (there was no no-intervention control group). The results were consistent with Somerset (3 and 4): counselling from non-professionals plus playing the board games was significantly better than the other three conditions, which did not differ. Also, only the experimental group made a significant gain in reading age ($p=0.01$).
- 'Pause, Prompt and Praise': There have been at least 20 studies on this approach, but the only one identified in which the subjects were lower-attaining British readers of a relevant age consisted of a very brief report in Wheldall and Colmar (1990) of a study with ten experimental pupils and ten in an alternative intervention group, too small for inclusion in this or the previous edition (though it was included in the original report).
- A number of non-linguistic (medical or physiological) approaches have attracted attention, some for many years (e.g. eye-patching, also known as ocular occlusion), others more recent (e.g. coloured lenses or overlays, movement programmes). An interesting review of such approaches by Dr Angela Fawcett, formerly of the Department of Psychology at the University of Sheffield (now a Professor at Swansea University) can be found on the DCSF SEN website: www.teachernet.gov.uk/wholeschool/sen/rdsyslexia/

  Yes, the last word really is spelt like that; Review 2 (February 2002) is the relevant one. Exaggerated claims have been made for some such programmes – see Goldacre (2006).
- A line of research that deserves much more attention is training children with reading difficulties to use mental imagery to improve their comprehension. So far the only British studies on this known to me are Oakhill and Patel (1991) and Joffe et al. (2007). Oakhill and Patel compared the effects of imagery training on 9- to 10-year-old children with good and poor listening comprehension; there were just 11 children in each of these groups, and in each of the control groups. The trained children were taught to form mental pictures of story events, and were told that this would help them answer questions about stories. Poor comprehenders who received the training improved in their ability to answer questions about stories relative to their controls, but the good comprehenders did not (the latter result was also found by Oakhill and Yuill, 1991). Joffe et al. (2007) trained nine children with specific language impairment to use mental imagery, and found that very brief training (five 30-minute sessions over three weeks) improved their literal and inferential comprehension relative to a comparison group of 16 'typically developing' children of the same age. None of these studies is large enough to include; given the general dearth of research on improving comprehension, larger studies in this area are urgently needed.

Several schemes in which quantitative research has been carried out with children of relevant ages in the UK could not be included because of problems with the data, such as:

- reporting only raw scores, either with no comparison group results at all, or without the standard deviations necessary to calculate an effect size;
- internal inconsistencies which could not be resolved from the information available.

A number of other schemes, some widely used, were not included because, again, no evaluation data could be found, either in the research literature or via direct approach to scheme originators or users. These schemes are included in the Acknowledgements (pp. 9-11).

4.2 The quality of the research

Having reviewed the Paired Reading literature, Topping and Lindsay (1992, p. 201) commented, with academic restraint: 'The quality of studies was extremely varied.' The literature surveyed for the 1998 version of this report varied from the meticulous to the very weak. The most meticulous was the only randomised controlled trial, the original Cumbria Reading with Phonology Project, now called Reading Intervention, though there were several other well-conducted quasi-experiments. The number of studies excluded from the analysis then (for whatever reason) was considerably larger than the number retained. Most of the excluded studies provided no quantitative data at all, and many of those which did provide such data were unusable, either because of basic design faults (too few subjects, same test used both pre and post over too short an interval, etc.) or because the data were unclear (averages did not correspond with the individual scores, too many children scored zero or maximum, etc.).

The trawls for the 2002 and 2007 editions were more focused and did not produce so much unusable information. There was still some, however. The major deficiencies on both occasions were again inadequate sample sizes, the use of unstandardised instruments, and failure to provide data from which an impact measure could be calculated.

This is not to say that those studies which are included necessarily provided all the information needed. The frequency of the phrase 'not stated' in the Appendix shows how much information was missing, sometimes even from the reports of quite large-scale, independently-funded evaluations.

Three particular problems arose from the tests used in the 121 studies. Firstly, some of the tests were old even when used in the relevant studies.

Secondly, most of the tests provided only reading/spelling age data and not standardised scores. Though apparently easier to interpret, reading and spelling ages are statistically unsatisfactory – for example, establishing whether a gain in test scores is statistically significant is more difficult for reading and spelling ages than for standardised scores. Reading and spelling age data do allow the calculation of the ratio gain – but this is in itself not a very useful statistic, especially for low-attaining groups. Pupils in such groups might not be expected to make a month's gain in reading or spelling age in one calendar month, for perfectly valid reasons. Standardised scores allow much more direct comparisons of amount of gain. Ratio gains have nevertheless been used in much of this analysis because for most of the studies they were the only impact measure which could be calculated.

Thirdly, for many of the tests used it was impossible to calculate effect sizes, which are statistically much more satisfactory than ratio gains. If a standardised test is used, an effect size can be calculated even in the absence of an explicit comparison group; but if a non-standardised test is used then an effect size can be calculated only if comparison group data, including the standard deviation, are reported.

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4.3 Recommendations

Whenever an educational innovation is devised and tried out, an evaluation should be commissioned.

All evaluations should be based on the gathering of quantitative attainment data, and the data should come from the use of standardised tests, and not non-standardised instruments such as reading- and spelling-age tests.

Properly defined control or comparison groups should be set up, through random assignment or at least by matching.

All evaluations should report as a minimum the following information:

- the date when the evaluation was carried out (in addition to the date of reporting);
- the exact age range of the children involved;
- salient characteristics of the children involved, for example, whether they had special educational needs;
- the numbers of children in the experimental and control/comparison groups and in any alternative intervention groups;
- how children were assigned to the different groups, for example, randomly or by matching;
- the nature of any alternative intervention;
- the exact length of the intervention;
- the tests used;
- the pre- and post-test average standardised scores and standard deviations for every group involved; this would make it, strictly speaking, unnecessary to report the amount of gain, but this might be interesting in itself;
- the statistical significance of the differences between groups at pre-test, so that the initial equivalence of the groups can be shown, or the statistical handling of any significant pre-test differences can be explained;
- the statistical significance of the differences between pre-test and post-test scores for each group, so that it can be seen whether or not the absolute value of any gains was statistically significant; this is easier for standardised scores than for reading/spelling ages;
- the statistical significance of the differences between groups at post-test, or of the differences between their gains, so that the relative impact of different interventions (including no intervention) can be seen;
- the effect size, so that the impact of the approach can be compared with others
- any follow-up data that are available.

In future, full information ought to be provided, so that non-participants can judge the effectiveness of intervention schemes more objectively, and so that funders (whether government or private) can see that resources have been deployed responsibly and usefully.

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Appendix

Details of the evaluations

The central part of this Appendix is a log of the 59 schemes, in the same order as in chapter three, namely, (A) schemes for reading and spelling at primary level; (B) schemes for reading and spelling at secondary level; (C) schemes for writing at primary level (there were none at secondary level). In the two previous versions there was a separate section for ICT-based schemes; given the increasing use of ICT in otherwise paper-based schemes, ICT-based schemes are now integrated with those for reading and spelling. Under each scheme are listed the salient statistical and related data used in the analysis in this report. Before the log, the nomenclature of school years and abbreviations are explained, and the organisation of the entries is described; and that description is followed by a number of notes of clarification.

After the log of the 59 interventions, the basis on which schemes have been compared is explained. The final section gives brief conclusions from follow-up data from 21 studies.

Key to school years:

Label of school year				
in England and Wales	**in Scotland**	**in Northern Ireland**	**in North America**	**Age of pupils (in years)**
Reception	Preschool	P(rimary) 1	Pre-kindergarten	4–5
Year 1	P(rimary) 1	P(rimary) 2	Kindergarten	5–6
Year 2	P(rimary) 2	P(rimary) 3	1st grade	6–7
Year 3	P(rimary) 3	P(rimary) 4	2nd grade	7–8
Year 4	P(rimary) 4	P(rimary) 5	3rd grade	8–9
Year 5	P(rimary) 5	P(rimary) 6	4th grade	9–10
Year 6	P(rimary) 6	P(rimary) 7	5th grade	10–11
Year 7	P(rimary) 7 *	S(econdary) 1	6th grade	11–12
Year 8	S(econdary) 1	S(econdary) 2	7th grade	12–13
Year 9	S(econdary) 2	S(econdary) 3	8th grade	13–14
Year 10	S(econdary) 3	S(econdary) 4	9th grade	14–15
Year 11	S(econdary) 4	S(econdary) 5	10th grade	15–16

* Two schemes involved children from Scottish P7 classes (The Accelerated Reader, Toe by Toe in West Dunbartonshire). Because children of this age elsewhere in the UK are in secondary schools, these schemes have been included with secondary schemes here.

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Abbreviations:		
	acc	(reading) accuracy
	AI	alternative intervention
	BASWRT	British Ability Scales Word Reading Test
	c.a.	chronological age
	comp	comprehension
	comps	members of a comparison group
	conts	members of a control group
	exps	members of an experimental group
	m	months
	N	sample size
	n/a	not applicable
	ns	non-significant
	r.a.	reading age
	s.a.	spelling age
	s.d.	standard deviation
	ss	standardised scores
	stand.	standardised
	RG	ratio gain

A.1 Introduction to the evaluation data

The entries below are organised, as far as possible, in the order shown in Table A.1.

Table A.1: Organisation of entries in log of studies

	See Note
Name of intervention	
Main reference(s)	
Research design	1)
Date when it was implemented	
Age range of children involved, in school years (Y2, etc.)	
Type of children involved	2)
Number of pupils in experimental group	
Number of pupils in control/comparison group, where there was one	
Number of pupils in alternative intervention group, where there was one	
Nature of alternative intervention	
For each group, number of schools, where known	

Whether groups were equivalent	3)
Length of intervention in weeks	
Reading and/or spelling test(s) or writing assessment used	4, 5)
For each group (where known), pre- and post-test average scores, and units in which these are stated	6)
For each group (where known), difference between pre- and post-test average scores ('gain') in relevant units	7)
For each group, where scores are reading ages (r.a's), ratio gain (RG), stated to one decimal place	8)
Effect size (where this was known or could be calculated), stated to two decimal places	9)
Statistical significance of differences between pre- and post-test scores, and between experimental, control/comparison and alternative intervention groups, where known	10)
Summaries of starting and ending levels and progress	11)
Follow-up data, if any	

Notes to Table A.1:

One general note needs to be given first: the term 'reliable' is used throughout this Appendix in its everyday and not in its technical sense.

1) **Research design:** categorised as one of

	N
randomised controlled trial (RCT)	9
matched groups quasi-experiment	21
unmatched groups pre-test/post-test study	18
one-group pre-test/post-test study	73

Altogether, 121 studies are analysed in this report. The numbers on the right above show how many had each type of design. Where effectiveness research is concerned, RCTs are the gold standard because they alone permit all possible biasing factors to be ruled out. This is why the only no-intervention groups that are called 'control groups' in this report are those within RCTs. The nine studies which had this type of design, with indications of total sample size across groups and outcomes (> = 'made significantly more progress than'), are listed in Table A.2.

Table A.2: List of randomised controlled trials

Ref no.	Study	N *	Outcome
14	Improving Spelling by Teaching Morphemes (part of 1st study)	34	exps>other groups
26	Phonology with Reading	146	ELS>Reading Intervention on Early Word Reading & accuracy; no difference on comprehension; both>no intervention
27	RAPID	786	exps (slightly)>controls

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29	Reading Intervention (original study in Cumbria)	124	exps>other groups
30	Phonological Training (PT) scheme within RR in London & Surrey study	135	no difference between PT & cont.
34	Somerset (4th study, probably)	335	exps & similar intervention> controls
40	Time for Reading	99	no difference between exps & control
58	Paired Writing (1st study)	32	exps>controls
58	Paired Writing (2nd study)	26	exps>controls

* N = total sample size across groups

On the basis of Table A.2, one would not use Time for Reading or the Phonological Training scheme in the Reading Recovery in London and Surrey study, and would want larger-scale evidence on Improving Spelling by Teaching Morphemes (which exists in the rest of the study) and Paired Writing. Though Early Literacy Support was no more effective for comprehension than Reading Intervention, it was still effective. That and the other schemes seem worthwhile, on this evidence.

Random allocation is not always possible, so researchers often resort to matching groups on known characteristics. The 20 quasi-experiments with this type of design, with similar annotations (< = 'less than') are listed in Table A.3.

On the basis of Table A.3, one would not use Phonological Awareness Training, SPELLIT, Integrated Learning Systems (see also below) or (for comprehension) The Secondary Reading Research, but there is other and better evidence on Catch Up Literacy, Reading Recovery and Somerset. Those and the other schemes seem worthwhile, on this evidence.

Table A.3: List of matched-groups quasi-experiments

Ref no.	Study	N *	Outcome
5	Catch Up Literacy (within pilot study)	48	exps>other groups
5	Catch Up Literacy (national study)	123	little difference
16	Inference Training (1st study)	52	good for poor comprehenders, less so otherwise
18	IA&T	185	exps>other groups
21	Paired Reading (1 aspect)	1026	exps>other groups
22	Parental Involvement	248	exps>other groups
25	Phonological Awareness Training	48	exps made standard progress; other group fell further behind
29	Reading Intervention (3rd study)	113	exps gained, but<other groups
30	Reading Recovery, London & Surrey (mostly)	390	exps>other groups during project, but mostly washed out 3 years later except for children who were non-readers at start
30	Reading Recovery, ECaR, reading data	254	exps>other group
32	RITA	242	exps & alternative intervention> comparison group

34	Somerset (1st study)	46	little difference
34	Somerset (2nd study)	28	no difference
34	Somerset (3rd study)	48	exps>other group
37	SPELLIT	150	little difference
38	The Early Reading Research (KS1 study)	66	exps>other group
47	ILS Phase III, Y9 & Y11 (Leicester study)	'relatively small'	very little difference
49	Philosophy for Children	32	exps>other group
51	Sound Training for Reading	91	exps>other group
53	The Secondary Reading Research	124	no difference on comprehension; exps>other group on accuracy & spelling
59	Reading Recovery, ECaR, writing data	254	exps>other group

* N = total sample size across groups

Where matching of groups is not possible but researchers still want some sort of comparison they sometimes use available but unmatched groups ('opportunity samples'). The 15 studies with this type of design, with similar annotations (>> = 'made much better progress than'), are listed in Table A.4.

On the basis of Table A.4, one would be even less likely to use Integrated Learning Systems or (for spelling) MTSR. ELS did produce gains – but they were similar to those from Reading Intervention. The other schemes seem worthwhile, on this evidence.

For more tabulation, and for the 72 one-group pre-test/post-test studies, see the Tables at the end of this Appendix.

Table A.4: List of unmatched-groups pre-test/post-test studies

Ref no.	Study	N *	Outcome
4	Better Reading Partnerships (Bradford)	c.510	exps>other group
4	Better Reading Partnerships (Worcestershire)	288	exps (slightly)>other group
5	Catch Up Literacy (main part of pilot study)	105	exps>other groups
8	Early Literacy Support	128	no difference from Reading Intervention, but both effective
13	Further Literacy Support	3774	exps (slightly)>other group
14	Improving Spelling by Teaching Morphemes (most of 1st study)	686	exps (slightly)>other groups
14	Improving Spelling by Teaching Morphemes (2nd study)	69	exps>other groups
15	Individual Styles in Learning to Spell	47	exps>other group
16	Inference Training (2nd study)	75	exps>other group

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17	ILS Phase II, Y5	several hundred	very little difference
17	ILS Phase III, Y5	477	very little difference
20	MTSR (1st study, Y5)	35	exps>other group for reading, other group>>exps for spelling
36	Sounds~Write	51	exps>other group
47	ILS Phase II, Y7-9	several hundred	very little difference
47	ILS Phase III, Y8	1700	very little difference
47	ILS Phase III, Y9 & Y11 (Durham study)	at least 39 601	very little difference
48	Literacy Acceleration (1st study)	39	exps>other group for reading & spelling
48	Literacy Acceleration (2nd study)	39	exps>other group for reading, no difference for spelling

* N = total sample size across groups

2) **Type of children:** categorised as one of:

   SEN – identified as having special educational needs

   Low (reading and/or spelling or writing) attainment, which will in many cases include children identified as having SEN

   Mixed ability – though this still means that the group studied was underachieving, on average, by national standards.

   Some studies mention children with dyslexia, but too few to make a useful list. In the experimental literature as a whole the vast majority of reports on improving the literacy of children with dyslexia are case studies, making quantitatively-based generalisation impossible. However, given the estimated incidence of dyslexia (4–10% of the population) it is highly likely that groups categorised as SEN or low attainment would include some pupils with dyslexia.

3) **Equivalence of groups:** This note deals first with alternative intervention (AI) groups, then with no-intervention control/comparison groups.

   Twenty of the studies had one or occasionally two AI groups as part of the design. These are listed in Table A.5 which shows that methods of allocation ranged from the most rigorous (Reading Intervention, original study) to happenstance ('opportunity samples'). Despite this, results from all AI groups except Paired Reading are analysed here, but readers should be alert to the differences in reliability.

Table A.5: Schemes with alternative intervention groups, by method of allocation and whether also had no-intervention group

Scheme	Method of allocation	No-intervention group?
5 Catch Up Literacy, pilot study	Matching	Yes
5 Catch Up Literacy, national study	Matching	Yes
8 Early Literacy Support	Pupils allocated by their schools, but pre-test levels equal	No
14 Improving Spelling by Teaching Morphemes, RCT within 1st study	Random at pupil level within one class	Yes
14 Improving Spelling by Teaching Morphemes, 2nd study	At class level – not clear whether random or by judgment	Yes
16 Inference Training, 1st study *	Matching, but some differentiation on comprehension	No
20 MTSR, in Y5 section of 1st study	Opportunity samples?	No
21 Paired Reading	(too numerous & disparate to summarise or analyse)	Yes
22 Parental Involvement	Random at school & class level	Yes
26 Phonology with Reading	Random at pupil level	No
29 Reading Intervention, original study *	Random within matched quadruples	Yes
30 Reading Recovery in London and Surrey, included RCT	Random at pupil level	Yes
30 Reading Recovery in London and Surrey, main part of study	Matching	Yes
32 RITA	Matching	Yes
34 Somerset, 1st study *	Matching	Yes
34 Somerset, 2nd study	Matching	No
34 Somerset, 3rd study	Matching	No
34 Somerset, 4th study *	Random at pupil level?	Yes
36 Sounds~Write	Opportunity samples	No
37 SPELLIT	Random but with some reallocation to match groups	Yes

* = study with two AI groups; all others had one ? = not clear from report

Of the 47 studies listed above under RCTs, quasi-experiments and unmatched-groups studies, 40 had a no-intervention control/comparison group, namely, all but the seven listed in Table A.5 as not having one. The methods of allocation are implied by the classification of the research designs: random at some level in RCTs, matching in quasi-experiments, some form of opportunity sampling in unmatched-groups studies.

The differences in rigour of allocation, both to AI and control/comparison groups, have implications for the handling of statistical comparisons between groups. In this report, where such comparisons can be calculated within RCT and quasi-experimental designs, they are taken to be reliable and are

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reported. Such comparisons are reported from unmatched-groups studies only where statistical means have been used to control for pre-test differences, for example, BRP in Worcestershire, ELS, FLS, ISTM (both studies), Individual Spelling; in other cases such comparisons are not reported because they would not be reliable.

However, where a ratio gain (RG – see below) can be calculated for both groups within an unmatched-groups study both are taken to be reliable and are reported. This is because RGs are always calculated independently for each group, and hence can in a sense be seen as *absolute* statistics.

Special note has to be taken of the first ILS study. From the report of that study it is clear that there were comparison groups, but the details of their selection, and even the number of children involved, are unclear. Nevertheless, given the provenance of the study, it is assumed for the purposes of this analysis that the comparison groups were properly constituted even if not necessarily matched, and comparative statistics from them are used where possible.

4) **Choice of tests to report:** Almost all these studies used more than one instrument to measure impact, and most used several. Only reading and spelling test and writing assessment results have been analysed here, on the grounds that the main focus of this enquiry is interventions designed to boost literacy attainment. Some reading tests yield more than one score (for example, depending on how it is administered, the Neale Analysis can give scores for both reading accuracy and reading comprehension); where this is so, both sets of data have been given. Except where it is clear that they yield measures of comprehension, the reading tests cited have been classified as giving measures of reading accuracy.

5) **Range of tests used:** A great variety of reading tests was used in the studies under consideration, ranging from various editions of the Burt test (first published in the 1920s) to much more recent and more reliable instruments such as the British Ability Scales Word Reading Test, 2nd edition. Only a few spelling tests were used, but again some were rather old, especially the Schonell. Use of old tests may limit the reliability of some of the findings. Each of the writing studies analysed used a different form of assessment – for details, see the separate entries in part C of this Appendix – but all were recent.

6) The units in which average scores and s.d's are stated are almost always either reading/spelling ages or standardised scores, occasionally both. Raw scores have been used in a few cases, e.g. ELS, ISTM (both studies), Phonology with Reading, RAPID, Reading Recovery in London and Surrey, Somerset (4th study), Time for Reading, Family Literacy (writing data), Paired Writing (both studies). However, in all these cases except Family Literacy it was possible to calculate an effect size using information from a control/ comparison group.

7) Where the units of measurement are r.a's/s.a's, gain is given in months of r.a./s.a.

8) **Ratio gain (RG):** This is defined by Topping and Lindsay (1992, p. 201) as 'the gain in reading age made by a subject on a reading test during a chronological time span, expressed as a ratio of that time span; that is, ratio gain equals reading age gain in months divided by chronological time in months'. For a group, this can be stated as the formula:

$$\frac{\text{(average reading age in months at post-test)} - \text{(average reading age in months at pre-test)}}{\text{time elapsed in months}}$$

(The definition and formula are obviously applicable to spelling too.)

Lingard (1994, 1997a) apparently invented the same concept independently, and called it 'average monthly progress' or AMP. That label is clearer, being self-explanatory, but unfortunately is unlikely now to displace the entrenched term, ratio gain.

Calculating an RG does not require data from a comparison group – but where any non-experimental group and the necessary r.a./s.a. data are present, that group's RG can and should be calculated too; and the RGs for non-experimental groups are valid for those groups independently of whether they were properly equivalent to the experimental group, because each RG is calculated for the relevant group of participants without reference to any other group. Normally an RG is the only impact measure that can be calculated for a one-group study – but see below.

The dispersal of scores (as shown in the standard deviation) is ignored in RGs – only the average reading/spelling ages at pre- and post-test and time elapsed are used. RG is therefore a statistically unsophisticated device; but, as Topping and Lindsay further point out, using raw gains instead 'renders the highly heterogeneous literature very difficult to summarise'. Also, since over half the evaluations surveyed here used reading ages as their reporting units (see the list of entries below) it seemed appropriate to use RGs in attempting to estimate the effects of those interventions.

However, RGs do take account of the length of time over which an intervention achieves its impact – as shown in the formula, this is done by dividing the gain in months of reading/spelling age by the number of months between pre- and post-test.

RGs were explicitly stated in only a few of the older reports. However, the r.a. data required for calculating RGs were given in many more, and several more recent reports (in some cases explicitly acknowledging earlier editions of this one) do report them. Some reports did not use tests which yielded r.a's/s.a's, and therefore RGs could not be calculated for them – where this was the case I state 'Ratio gain: n/a'.

9) **Effect size:** This is a more statistically based metric. It involves dividing the difference between the gains made by the experimental group and control/comparison group by a relevant standard deviation, and the result is expressed as a decimal of an s.d. Positive effect sizes show a difference in favour of the experimental group, negative ones a difference in favour of the control/comparison group. Almost all reported effect sizes seem to fall in the range -0.10 to +1.00, which suggests bias against publishing negative findings. The usual rule of thumb for interpreting effect sizes is that those below 0.25 are very small and probably not of educational significance; those between 0.25 and 0.50 are small; those between 0.50 and 0.80 are medium; and those above 0.80 are large.

   The top line of the formula for calculating effect sizes can be stated as:
   (average gain of experimental group) – (average gain of control/comparison group)

   This part of the formula can be applied equally to r.a's, s.a's, standardised scores and raw scores derived from two or more appropriately constituted groups, but problems can arise with the choice of the appropriate s.d. to use as the denominator. Having taken advice from several statisticians I have concluded that the appropriate s.d. to use is either (1) the pooled post-test s.d. of the experimental and control/comparison groups, provided that the variances are not significantly different; or (2) where the variances are significantly different, the post-test s.d. of the control/comparison group alone.

   In practice, however, the first of these options is rarely available because it involves having access to all the raw data at individual level. In this edition effect sizes have been calculated (by Mark Pilling) from the pooled post-test s.d. for just two studies where full data had been supplied by the original authors: Philosophy for Children, and Sound Training for Reading. Equivalent calculations were carried out and the results provided by the authors of two Reading Recovery studies (London and Surrey, and Every Child a Reader in London) and ISTM (1st study), and an even more sophisticated statistical model was used by the authors of the RAPID report.

   Most other effect sizes in this edition have been calculated (by me) using just the control/comparison group's post-test s.d.

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In a few cases I was able to calculate effect sizes even in the absence of a control/comparison group. These were all studies which used standardised tests. Where such a test is used, there is always an implicit or 'unseen' comparison group, the one provided by the standardisation sample. In these circumstances the absence of an explicit comparison group, or of its data, can be circumvented, since an effect size can be calculated by using the s.d. (usually 15.0) and mean scores of the standardisation sample; and since the mean scores of the standardisation sample are by definition the same at pre- and post-test, the comparison group term in the formula reduces to zero, and the formula simplifies to:

$$\frac{\text{(average gain of experimental group in standardised score points)}}{\text{15 (or other relevant s.d.)}}$$

where the term above the line can be expanded to
(average standardised score of experimental group at post-test) –
(average standardised score of experimental group at pre-test)

This approach was applied in the following cases: AcceleRead AcceleWrite (1st study), Family Literacy (all three studies, reading data only), SIDNEY, Literacy Acceleration (all 3 studies), Read Write Inc. Fresh Start (1st and 3rd studies), and The Accelerated Reader.

In some other cases I have had to report (having sometimes calculated, sometimes relied on authors' information) effect sizes based on denominators other than post-test s.d's. Where this is the case it is clearly stated. Where the s.d. used was from a pre-test it probably does not affect the reliability of the effect size very much unless (unbeknownst to me) the post-test s.d. was much larger or smaller – but this is unusual. Pre-test comparison group s.d's were used by me for Individual Spelling, Inference Training (1st study), PAT and the first three Somerset studies; in the first ILS study and RITA the authors used the *pooled* pre-test s.d's.

In a very few cases the only comparison group s.d. available, or the one used by an author, was that of the gain. Effect sizes based on this statistic measure something rather different from those based on the other forms of s.d. mentioned here, and (depending on the size of the correlation between pre- and post-test scores) such effect sizes may be overestimated by a factor between about 1.3 and 2.2 (information supplied by Dougal Hutchison in 1998). Moreover, using this approach confounds any gain due to the programme with gain due to maturation (as pointed out by Ian Schagen in 2007). I have used it only for the 4th Somerset study, and reproduced such data only for Paired Reading (see Topping and Lindsay, 1992, p. 211, for their formula).

Effect sizes (however calculated) are much more statistically sophisticated than RGs because they take account of the dispersal of scores (through the s.d.) and of a control/comparison group, preferably an explicit one but sometimes the implicit one provided by the standardisation sample. They normally take no account of the length of time over which an intervention achieved its impact, but Torgesen (2005, p. 529) appears to have pioneered a method of taking account of time elapsed when measuring gain using tests that yield standardised scores: 'SS gains per hour of instruction'. He defines this as a 'metric… calculated by dividing the amount of gain in standard[ised] score units by the number of hours of instruction… provided, so rate of growth is expressed as the number of standard[ised] score points gained per hour of instruction'. No attempt has been made here to calculate such figures, mainly because the number of hours of instruction is very rarely stated in reports.

Wherever it was impossible to calculate any form of effect size (i.e. mainly in one-group studies reporting only r.a./s.a. data) I have stated 'Effect size: n/a'.

10) **Statistical significances:** Two forms of statistical significance data would be relevant, where available, namely, on the gains of separate groups (difference between pre- and post-test average scores), and on the differences between gains where there was more than one group.

When the gains of separate groups are tested for significance, the fact that children are older by the time of the post-test has of course to be allowed for. Where standardised tests are used, the tables for converting raw scores to standardised scores provide for this automatically. Where r.a./s.a. tests are used, allowing for age is more complicated, but can still be accomplished. It is remarkable that within the studies analysed here, hardly any stated the significance of gains within groups. Such statistics have been calculated (by Mark Pilling or me) for just a few studies. The absence of such statistical information seems very remiss. It is particularly bothersome where there was neither a reliable comparison group nor average standardised scores, because then the importance of the result has to be judged 'by eye' from the RG – which was the case in the majority of studies.

Statistical significances of the differences between gains were given (or implied) in several cases, but by no means universally.

11) Starting and ending levels are described in the following terms:

Average standardised scores:	85–92	just below age-related expectation
	78–85	below age-related expectation
	<78	significantly below age-related expectation
Reading and spelling ages:	<5:0	absolute non-readers/spellers
	5:0–7:0	functionally illiterate/not yet functionally literate
	7:0–9:0	semi-literate
(for secondary schemes only	9:0–11:0	likely to struggle with the secondary curriculum)

A.2 Data on evaluated schemes

A. Schemes for reading and spelling at primary level

1 A.R.R.O.W.

Main reference: Unpublished data supplied by Colin Lane

Research design: One-group pre-test/post-test study

Date: 2003–04

Age range: Y1–6

Type of children: Low attainment

N of experimental group: 91

N of comparison group: (no comparison group)

N of alternative treatment group: (no alternative treatment group)

Length of intervention in weeks: 1½

Tests used: Schonell Graded Word Reading Test, Schonell Spelling Test

Pre- and post-test average reading/spelling ages and s.d's (in years and months), gains (in months) and ratio gains:

	pre		post		gain	RG
	mean	(s.d.)	mean	(s.d.)		
reading accuracy	7:9	(1:5)	8:4	(1:6)	7	16.5
spelling	7:4	(1:3)	7:10	(1:2)	6	14.1

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Difficult to generalise because of wide age range, but child with these average scores would be considered semi-literate at pre-test. The RGs show that this amount of progress in 1½ weeks was remarkable, if not spectacular. The children caught up quite a lot of ground, but would still be considered semi-literate at post-test and needing to have appropriate further teaching to sustain these gains and make more.

Follow-up: (no follow-up)

2 Academy of Reading®

Main reference: Loh and Stanton (2004)

Research design: One-group pre-test/post-test study

Date: 2003–04

Age range: Northern Irish Y4–7 (England and Wales Y3–6)

Type of children: Low attainers

N of experimental group: 115 in 8 schools in 5 Education and Library Board areas in Northern Ireland (for year groups see below)

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 20

Reading test: NFER-Nelson Progress in English

Pre- and post-test average standardised scores for reading comprehension, gains in standardised score points (s.d's not stated), statistical significances, and effect sizes calculated using the s.d. of the standardisation sample (15.0):

NI year	E&W year	N	pre	post	gain	p	effect size
4	3	27	91.0	99.2	8.1	<0.01	0.54
5	4	13	78.5	87.8	9.3	<0.01	0.62
6	5	35	84.6	90.0	5.4	<0.01	0.36
7	6	40	80.3	89.1	8.8	<0.01	0.59

Ratio gains: n/a

Starting and ending levels and progress: The average pre-test scores were all below age-related expectation (that for NI Y4 only just so). NI Y6 made a modest gain, the other years useful ones. These brought NI Y4 up to the national norm, and the other years ended not far below age-related expectation.

Follow-up: (no follow-up)

3 AcceleRead AcceleWrite

(1) Jersey

Main reference: Jersey Advisory Service (1993)

Research design: One-group pre-test/post-test study

Date: 1993

Age range: Y3–9 (Ns for separate years not given; average age at outset 10:3)

Type of children: Low attainment (r.a. said to be well below c.a. – but see below)

N of experimental group: 61 in 15 primary & 4 secondary schools (62 for spelling)

N of comparison group: (a comparison group of 9 pupils (10 for spelling) was too small to analyse)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 4

Tests used: British Ability Scales

Pre- and post-test and follow-up r.a's/s.a's and s.d's: not stated

Gains between pre- and post-test in months of r.a./s.a. (s.d's not stated) and ratio gains:

	gain	RG
reading accuracy	8.3	8.3
spelling	4.0	4.0

Average standardised scores at pre- and post-test and 10-week and 6-month follow-ups, gains from pre-test (s.d's not stated), and effect sizes for post-test vs. pre-test only calculated (by GB) using s.d's of standardisation samples:

Reading accuracy	Average score	Gain	Effect size
pre	92.4		
post	100.7	8.3	0.55
10-week follow-up	103.0	10.6	
6-month follow-up	105.7	13.3	

Spelling	Average score	Gain	Effect size
pre	96.0		
post	100.0	4.0	0.27
10-week follow-up	100.7	4.7	
6-month follow-up	103.8	7.8	

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Although the original report says the children's r.a's were 'well below' c.a., the pre-test standardised scores were already quite close to age-related expectation. The RGs show remarkable gains, the effect size for reading a useful one, that for spelling a modest one. By post-test the standardised scores were at national norms, and at follow-ups showing continuing improvements beyond them.

Follow-up: see above

3 AcceleRead AcceleWrite

(2) Devon

Main reference: Unpublished data supplied by Martin Miles

Research design: One-group pre-test/post-test study

Date: 2002

Age range: 'Older KS2'

Type of children: Low attainment ('identified as experiencing difficulties with reading and/or spelling')

N of experimental group: 30

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 4

Tests used: British Ability Scales Word Reading and Spelling

Pre- and post-test average r.a's and s.a's and s.d's: not stated

Gains in months of (r.a./s.a.) and ratio gains:

	gain	**RG**
reading accuracy	16.1	16.1
spelling	9.8	9.8

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the RGs seem to show remarkable, if not spectacular, progress.

Follow-up: (no follow-up)

3 AcceleRead AcceleWrite

(3) Bristol

Main references: www.bristol-cyps.org.uk/teaching/sen/pdf/sen_wave3_report.pdf and unpublished data supplied by Sue Derrington

Research design: One-group pre-test/post-test study

Date: 2004–05

Age range: Y2–6

Type of children: SEN

N of experimental group: 60 in 13 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: not stated, and varied between schools, but average appears to have been about 8

Tests used: NFER Individual Reading Analysis (KS1), Neale (2nd UK edition, accuracy and comprehension) (KS2), Vernon Spelling Test (both)

Pre- and post-test average r.a's/s.a's and s.d's: not stated

Gains in months of r.a./s.a. (s.d's not stated) and ratio gains:

	gain	RG
reading accuracy	4.6	2.3
reading comprehension	5.3	2.9
spelling	2.8	2.0

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the RGs show useful progress.

Follow-up: (no follow-up)

3 AcceleRead AcceleWrite

(4) Wiltshire

Main reference: Unpublished data supplied by Sarah Couzens

Research design: One-group pre-test/post-test study

Date: 2005–06

Age range: Y3–6

Type of children: Low attainment

N of experimental group: 149 (N of schools not stated)

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 4

Tests used: (reading) Macmillan, NFER Group test; (spelling) NFER

Pre- and post-test average r.a's/s.a's and s.d's: not stated

Gains in months of r.a./s.a. (s.d's not stated) and ratio gains:

	gain	**RG**
reading comprehension	7.7	7.7
spelling	6.2	6.2

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the RGs show remarkable progress.

Follow-up: (no follow-up)

4 Better Reading Partnerships

(1) Bradford

Main reference: Collins (1996)

Research design: Two-group pre-test/post-test study

Date: May 1995–April 1996

Age range: Y1–7? ('First and Middle schools')

Type of children: Low attainment

N of experimental group: 510(?) in 30(?) schools – information in report unclear

N of comparison group: not stated

Equivalence of groups: not stated

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 10

Reading test: Suffolk, 1st edition

Pre- and post-test average scores and s.d's: not stated

Gains in reading accuracy (in months of r.a.) and ratio gains:

	gain	**RG**
experimentals, First schools	5.9	2.4
experimentals, Middle schools	6.2	2.5
comparison group	2.1	0.8

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the RGs show useful progress for the experimental groups, while the comparison group were falling further behind.

Follow-up: Children in (apparently) Middle schools made a further gain of 3.7 months of r.a. in 2–3 months post programme; further RG = 1.5; total gain = 9.8 months (in 5 months); total RG = 2.0.

4 Better Reading Partnerships

(2) Derbyshire

Main reference: Taylor (2000)

Research design: One-group pre-test/post-test study

Date: 1998–99 (though data collected in other years too)

Age range: Y1–6

Type of children: Low attainment

N of experimental group: 683 (for year groups, see below)

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 11 (2.5 months used in calculating RG)

Reading test: Salford (mainly)

Pre- and post-test average raw scores and gains: not stated

Gains in reading comprehension (in months of r.a.) and ratio gains:

	N	gain	RG
Y1	20	12.3	4.9
Y2	184	9.7	3.9
Y3	120	8.5	3.4
Y4	133	9.0	3.6
Y5	107	8.0	3.2
Y6	90	8.4	3.4

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the RGs show substantial progress.

Follow-up: (no follow-up)

4 Better Reading Partnerships

(3) Durham

Main reference: Unpublished data supplied by Ann Foster

Research design: One-group pre-test/post-test study

Date: 1999–2001

Age range: Y1–5

Type of children: Low attainment

N of experimental group: 237 (for year-groups, see below)

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 10

Reading tests: (Y1–2) Neale Individual Reading Analysis; (Y3–5) Suffolk, 1st edn

Year groups, Ns, pre- and post-test and 3- and 12-month follow-up r.a's (s.d's not stated), gains since previous test (in months of r.a.) and ratio gains post vs pre:

age		N	pre	post	gain	RG	3-month follow-up	gain	12-month follow-up	gain
Y1	acc	39	6:0	7:6	18	7.2	7:7	1	8:11	16
	comp	34	6:6	7:5	11	4.4	8:0	7	8:4	4
Y2	acc	57	6:6	8:0	18	7.2	7:11	-1	8:9	10
	comp	46	6:2	8:1	23	9.2	8:4	3	8:11	7
Y3	comp	48	7:2	7:10	8	3.2	8:0	2	8:8	8
Y4	comp	39	7:6	8:1	7	2.8	8:4	3	8:9	5
Y5	comp	51	9:0	9:5	5	2.0	9:6	1	10:3	9

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The Y1–2 groups were not yet functionally literate at the start but made such remarkable progress that by the post-test they had r.a's above c.a. In the next three months they slipped back a little, relatively, in reading accuracy while at least sustaining the gains in comprehension, but one year on still had r.a's above c.a. The other three year groups were all functionally illiterate at the start, and even 12 months on only Y5 had progressed enough to be considered semi-literate. These were all presumably the lowest performers in their years, and the very slow progress illustrates the difficulty of boosting the attainment of such groups.

Follow-up: see above

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4 Better Reading Partnerships

(4) Redcar and Cleveland

Main reference: Unpublished data supplied by Andrew Taylor

Research design: One-group pre-test/post-test study

Date: 1997–2002

Age range: Y1–6

Type of children: Low attainment

N of experimental group: 1071

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 10

Reading test: Salford

Pre- and post-test average r.a's and s.d's: not stated

Average gain in reading comprehension (in months of r.a.): 8

Ratio gain: 3.2

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the RG shows substantial progress.

Follow-up: (no follow-up)

4 Better Reading Partnerships

(5) Worcestershire

Main Reference: Brooks and Hutchison (2000)

Research design: Unmatched groups two-group pre-test/post-test study

Date: 1999–2000

Age range: Mainly Y1–2; some Y4–6

Type of children: Mixed-ability

N of experimental groups: (phase 1) 146; (phase 2) 142

N of comparison groups: (phase 1) 142; (phase 2) 146. This was a cross-over design in which comparison group from phase 1 received the intervention in phase 2 and thus became second experimental group, while phase 1 experimentals became their comparison group. The phase 2 data from the 1st experimental group are therefore also follow-up data.

Equivalence of groups: not equivalent, but pre-test differences handled statistically; hence effect sizes considered reliable

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 17 (intervals used in calculating RG were 4 months between pre-test and 1st post-test, 5 months between 1st and 2nd post-tests)

Reading test: Suffolk

Pre- and 1st and 2nd post-test average r.a's and s.d's (in years and months), gains in reading comprehension (in months of r.a.), ratio gains, effect sizes * and significances:

	Pre-test (October 1999)		**1st Post-test (February 2000)**		**Gain**	**RG/ effect size**	**Signi-ficance**	**2nd Post-test (July 2000)**		**Gain**	**RG/ effect size**	**Signi-ficance**
Group	Mean	(s.d.)	Mean	(s.d.)				Mean	(s.d.)			
A	7:3	(1:1)	7:9	(1:5)	6	1.5/0.21		8:0	(1:6)	3	0.6	
							p<0.007					p<0.011
B	7:0	(1:0)	7:3	(1:2)	3	0.8		7:9	(1:5)	6	1.2/0.18	

* Effect sizes at 1st post-test (when group B had been the comparison group) were calculated as difference in gains divided by group B's 1st post-test s.d.; those at 2nd post-test (when group A had been the comparison group) as difference in gains since 1st post-test divided by group A's 2nd post-test s.d.

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Pre- and 1st and 2nd post-test average standardised scores, s.d's and gains in reading comprehension, effect sizes * and statistical significances:

	Pre-test (October 1999)		1st Post-test (February 2000)		Gain	Effect size	Signi-ficance	2nd Post-test (July 2000)		Gain	Effect size	Signi-ficance
Group	Mean	(s.d.)	Mean	(s.d.)				Mean	(s.d.)			
A	89.5	(9.5)	93.9	(9.6)	4.4			95.4	(10.1)	1.5		
							p<0.007					p<0.011
B	88.6	(11.0)	91.6	(11.0)	3.0			96.4	(11.4)	4.8		

* Effect sizes at 1st post-test (when group B had been the comparison group) were calculated as difference in gains divided by group B's 1st post-test s.d.; those at 2nd post-test (when group A had been the comparison group) as difference in gains since 1st post-test divided by group A's 2nd post-test s.d.

Starting and ending levels and progress: Despite the three statistically significant differences (which are due to the quite large sample sizes), the RGs and effect sizes show very modest gains, if any. The average r.a's are in the semi-literate range throughout, though the standardised scores rise from just below age-related expectation into the average range.

Follow-up: see above for the data. Group A made a further modest gain.

4 Better Reading Partnerships

(6) Nottinghamshire

Main reference: Unpublished data supplied by Karen Hanson

Research design: Two one-group pre-test/post-test studies

Dates: 2004–05, 2005–06

Age range: Y2–6

Type of children: Low attainment

N of experimental group: (2004–05) 77; (2005–06) 65

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 10 (2.5 months used in calculating RG)

Reading test: mainly Salford

Pre- and post-test average r.a's, gains and s.d's: not stated

Gains in reading comprehension (in months of r.a.) and ratio gains:

	N	Gain	RG
2004–05	77	9.6	3.9
2005–06	65	14.1	5.6

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the RGs show remarkable progress.

Follow-up: (no follow-up)

5 Catch Up Literacy (formerly known as Catch Up, then as The Catch Up Project)

(1) The Pilot Study

Main reference: Clipson-Boyles (2000)

Research design: Partly matched three-group pre-test/post-test study

Date: September–December 1997

Age range: Y3

Type of children: Low attainment (level 1 in reading in KS1 test)

N of experimental group: 74; 17 in sub-sample matched to comparison and AI groups

N of comparison group: 17

N of alternative intervention group: 14

Nature of alternative intervention: 'Teachers were asked to spend time equivalent to Catch Up with selected pupils.'

Equivalence of experimental sub-sample with comparison and AI groups: Three of the experimental schools were selected, then matched as closely as possible with 2 other sets of 3 schools; then pupils in all 3 groups of schools were chosen by the same method (6 pupils in each school who had achieved level 1 in reading in KS1 test)

Length of intervention in weeks: 10

Reading test: Hodder & Stoughton Literacy Baseline

Pre- and post-test average scores and s.d's, and gains in reading accuracy and s.d's, all in months of r.a., ratio gains, and effect sizes calculated by dividing differences in gain over comparison group's post-test s.d.:

	pre-test		post-test		gain		RG	effect size
	ave.	(s.d.)			ave.	(s.d.)	ave.	(s.d.)
experimentals – all	78.3	(6.0)	84.8	(7.5)	6.5	(5.3)	2.6	*
in matched schools	79.6	(4.3)	88.2	(6.2)	8.6	(5.9)	3.4	0.97
comparison group	81.0	(9.6)	82.1	(7.7)	1.1	(6.5)	0.4	
matched time group	77.1	(4.5)	80.6	(8.2)	3.5	(5.4)	1.4	0.31

* This effect size is not reported because it would be based on an unmatched comparison group.

Ratio gains: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: All pre-test average scores were below age-related expectation, as were the post-test averages for the comparison and AI groups. The Catch Up Literacy matched sample made substantial progress, and their post-test average was just below age-related expectation.

Follow-up: (no follow-up)

5 Catch Up Literacy

(2) The National Experimental Study

Main reference: Unpublished data supplied by Julie Lawes

Research design: Matched groups three-group pre-test/post-test study

Date: 1999–2000

Age range: Y3

Type of children: Low attainment (level 1 in reading in KS1 test)

N of schools: 98. The schools were randomly selected from a national database. Three parallel groups were created, taking into account variables such as number on roll, free school meals entitlement, EAL, etc. Once the schools chosen as experimental agreed to participate they were sent a pack and offered no further support

N of experimental group: 34

N of comparison group: 43

Number in alternative intervention group: 46

Nature of alternative intervention: 'Teachers were asked to spend time equivalent to Catch Up with selected pupils.'

Equivalence of groups of pupils: not stated

Length of intervention in weeks: 35

Reading test: Hodder Reading Progress Test Series

Pre- and post-test average r.a's and s.d's: not stated

Gains in reading comprehension (in months of r.a.) and ratio gains:

	gain	**RG**
experimentals	11.5	1.4
comparison group	8.0	1.0
matched time group	10.2	1.3

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the RGs show barely standard progress.

Follow-up: (no follow-up)

5 Catch Up Literacy

(3) Norfolk

Main references: Worsley (2001, 2003a, 2004, 2005a, 2006), and unpublished data supplied by Julie Lawes

Research design: Seven one-group pre-test/post-test studies

Date: 2000–06

Age range: Y2–6

Type of children: Low attainment. In 2000, 'Children were selected … according to the following criteria:

- Children from Y2–6 who have literacy difficulties, particularly in reading
- Priority to be given to those pupils who are unlikely to be successful with group interventions
- Priority to be given to those pupils who also have low self-esteem.' (Worsley, 2001)

N of experimental group: 1619 (for breakdown, see below)

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12–44 (see below)

Tests used: (reading comprehension) Salford Sentence Test, revised version 2000; (spelling) Young's Parallel Spelling Test A

Pre- and post-test average r.a's/s.a's and s.d's: not given

Area, date, length in weeks, age-ranges, Ns, gains in r.a./s.a. and ratio gains:

					Reading comprehension		Spelling	
area	**date**	**length in weeks**	**age**	**N**	**gain (in months of r.a.)**	**RG**	**gain (in months of s.a.)**	**RG**
Thetford	2000–01	44	Y2–4	508	19.8	2.0		
Gt Yarmouth	2000–01	30	Y6	544	9.6	1.4		
County-wide	2000–01	35	Y2–3	121	19.5	3.3	3.7	0.5
Norwich	2002–03	12	Y2	108	13.7	4.6	4.8	1.6
King's Lynn	2003–04	26	Y2	70	20.1	3.4	6.0	1.0
County-wide	2004–05	26	Y2–3	176	21.0	3.5		
County-wide	2005–06	26	Y2–6	92	18.9	3.2		

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the RGs for reading comprehension show useful-to-substantial progress, except for the Y6 group in 2000–01, who made very modest progress. In spelling, the Y2 group in 2002–03 made modest progress, the Y2 in the following year made standard progress, and the Y2–3 group in 2000–01 slipped further behind.

Follow-up: (no follow-up)

5 Catch Up Literacy

(4) Barnsley

Main reference: Sykes (2005)

Research design: One-group pre-test/post-test study

Date: 2004–05

Age ranges: Y2, Y4

Type of children: Low attainment

N of experimental group: (Y2) 61 in 14 schools; (Y4) 65 in 14 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 40

Reading test: Salford, revised

Pre- and post-test average r.a's and s.d's: not stated

Gains (in months of r.a.) and ratio gains for comprehension:

	gain	RG
Y2	27.1	2.7
Y4	20.1	2.0

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the RGs show useful progress.

Follow-up: (no follow-up)

5 Catch Up Literacy

(5) Hampshire

Main reference: Unpublished data supplied by Julie Lawes

Research design: One-group pre-test/post-test study

Date: 2005

Age range: Y2–6

Type of children: Low attainment

N of experimental group: 130 in 6 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 22

Reading test: Salford, revised

Pre- and post-test average r.a's and s.d's in years and months, gain (in months of r.a.) (s.d. not given), and ratio gain for comprehension:

pre		post		gain	RG
6:10	(1:6)	7:8	(1:6)	10	2.0

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The pre-test average was in the functionally illiterate range; the upper primary pupils in the sample must therefore have been well behind. The useful progress meant that the post-test average was in the semi-literate range.

Follow-up: (no follow-up)

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6 Cued Spelling

(1) The original study

Main references: France et al. (1993); also summarised in Topping (1995, 2001)

Research design: One-group pre-test/post-test study

Date: not stated (c.1991?)

Age range: Y4

Type of children: Low attainment (less able spellers, tutored by parents)

N of experimental group: 22 in one class in one school

N of comparison group: (a group of 10 better spellers in same class is mentioned in the report but was too small to analyse)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 6

Spelling test: Graded Spelling Test (Daniels and Diack, 1979)

Pre- and post-test average s.a's in years and months, gain (in months of s.a.), s.d's and ratio gain:

	Average s.a.	**(s.d.)**
Pre	8:4	(1:1)
Post	8:9	(1:2)
Gain	6.1	(6.1)
RG	4.1	

(source: France et al., 1993, Figure 2, p. 14)

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Pre- and post-test average scores were both in the semi-literate range, but if the remarkable progress shown by the RG were maintained the pupils would soon reach the norm for their age.

Follow-up: (no follow-up)

6 Cued Spelling

(2) Bristol

Main references: www.bristol-cyps.org.uk/teaching/sen/pdf/sen_wave3_report.pdf and unpublished data supplied by Sue Derrington

Research design: One-group pre-test/post-test study

Date: 2004–05

Age range: Y2–6

Type of children: SEN

N of experimental group: 50 in 15 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: not stated, and varied between schools, but average appears to have been about 8

Tests used: NFER Individual Reading Analysis (KS1), Neale (2nd UK edition, accuracy and comprehension) (KS2), Vernon Spelling Test (both)

Pre- and post-test average r.a's/s.a's and s.d's: not stated

Gains (in months of r.a./s.a. (s.d's not stated) and ratio gains:

	gain	RG
reading accuracy	4.6	2.1
reading comprehension	6.7	3.1
spelling	6.0	3.1

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the RGs show useful progress.

Follow-up: (no follow-up)

7 Direct Phonics

Main reference: Unpublished data supplied by Rea Reason

Research design: One-group pre-test/post-test study

Date: 2004

Age range: Y1

Type of children: Low attainment

N of experimental group: 24

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12

Reading test: WRAPS

Pre- and post-test average WRAPS ages in years and months (s.d's not stated), gain in accuracy in months, and ratio gain:

pre	post	gain	RG
5:2	5:7	5	1.7

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: These Y1 pupils were not yet functionally literate at pre- or post-test, but made modest progress towards the norm for their age.

Follow-up: (no follow-up)

8 Early Literacy Support

Main reference: Hatcher et al. (2006a)

Research design: Unmatched groups two-group pre-test/post-test study

Date: not stated, but about 2003-04

Age range: Y1

Type of children: Selected by their teachers as showing below-average levels of literacy and likely to benefit from a programme of literacy support – but their average pre-test standardised scores put them within the average range, at least in terms of the levels obtaining when the test was standardised in 1997

N of experimental group: 69 in 11 schools in 1 LA (North Yorkshire)

N of comparison group: (no no-intervention comparison group)

N of alternative intervention group: 59 in 11 schools in same LA; 6 of the schools also ran the experimental condition and were therefore among the 11 above, the other 5 were different

Nature of alternative intervention: Reading Intervention (RI) – see section 3.29 – modified to resemble ELS time-allowances more closely

Equivalence of groups: The authors 'had no control over the assignment of children to group[s]' (Hatcher et al., 2006, p. 354) because the schools chose the programmes and (where they were running both) which children received which, but the groups were well matched on pre-intervention measures, except spelling. However, pre-test differences were allowed for statistically and effect sizes are therefore considered reliable and reported below

Length of intervention in weeks: 12, but 19 weeks between pre- and post-tests

Reading tests: Early Word Reading (EWR) test (Hatcher, 1992), BASWRT

Spelling test: Experimenter-devised test (after Snowling et al., 2003) using 5 words and with maximum score of 41 awarded for correct or plausible details

Pre- and post-test average raw (EWR, spelling) or standardised (BASWRT) reading accuracy and spelling scores, s.d's, gains (s.d's of gains not stated), and between-groups effect sizes calculated (by GB) as differences in gains divided by RI group's post-test s.d's:

ELS						RI					Effect
	pre		post		gain		pre		post	gain	size
Test	ave.	(s.d.)	ave.	(s.d.)		ave.	(s.d.)	ave.	(s.d.)		
EWR	17.83	(9.15)	28.10	(8.74)	10.27	18.07	(10.12)	29.05	(10.10)	10.98	-0.07
BAS	94.10	(10.69)	100.64	(12.62)	6.54	94.27	(10.36)	99.78	(13.15)	5.51	0.08
Splg.	21.42	(9.65)	26.94	(8.32)	5.52	17.88	(10.03)	24.83	(10.04)	6.95	-0.14

Ratio gains: n/a

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Within-group effect sizes: These could be calculated only for BAS (because the other tests were not standardised) and only by assuming the s.d. of the standardisation sample was 15.0. On this basis the within-group effect sizes were:

ELS group	0.44	RI group	0.37

Statistical significances: All pre/post differences were significant

Starting and ending levels and progress: The statistical significances show both groups made progress. The BAS within-group effect sizes show both groups made modest progress, and the post-test average scores on the BAS test show that both groups were now at the national average obtaining at the time the test was standardised (having been not all that far below it at pre-test). However, after correction for pre-test differences, differences in gains between groups were all non-significant – the two groups had made equal progress, as confirmed by the tiny between-groups effect sizes.

Follow-up: Both reading tests were given again 2 months after the post-test, 3 months after the end of the programmes. Both groups had made further equal gains in raw scores; their standardised BAS scores had not changed significantly from the post-test, showing that they had made standard progress in the interim and therefore maintained the gains made during the programmes.

9 ENABLE (Enhancing Attainment in Basic Literacy)

(1) ENABLE – ONE-TO-ONE

Main references: For a description of the programme, Bowen and Yeomans (2002); for data analysed below, Bowen (2003)

Research design: One-group pre-test/post-test study

Date: 2002

Age range: Y2

Type of children: Children identified as having literacy difficulties by the member of teaching staff from each school nominated as ENABLE Coordinator

N of experimental group: 100 in 15 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 8

Tests used: Salford Sentence Reading Test, Schonell Spelling Test

Pre- and post-test average reading and spelling ages and s.d's: not stated

Gains in months of r.a./s.a., and ratio gains:

	gain	RG
Reading comprehension	6	3.0
Spelling	7	3.5

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the RGs show substantial progress.

Follow-up: (no follow-up)

9 ENABLE (Enhancing Attainment in Basic Literacy)

(2) ENABLE-Plus

Main reference: Bowen and Yeomans (2002)

Research design: One-group pre-test/post-test study

Date: 2000–01

Age range: Y3–5 (7:00–9:00 at outset)

Type of children: One had Statement of Special Educational Need; all others were receiving School Action under the Code of Practice

N of experimental group: 29, all in one primary school (also 14 in another primary school, not analysed because of small sample)

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 22

Reading test: BASWRT

Pre- and post-test average r.a's in years and months (s.d's not given), gain in reading accuracy in months of r.a., and ratio gain:

pre	post	gain	RG
5:10	6:09	11	2.2

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: These Y3–5 pupils, all with serious difficulties, were functionally illiterate both pre and post, but made useful progress.

Follow-up: (no follow-up)

10 Family Literacy

(1) Basic Skills Agency's Demonstration Programmes

Main references: Brooks et al. (1996, 1997)

Research design: One-group pre-test/post-test study

Date: Summer 1994–Summer 1995 (1 cohort of children in each term)

Age range: Nursery to Y2 (ages 3–6), but reading data only on those in Y1–2 (ages 5 & 6)

Type of children: Low attainment

N of experimental group: Total 392, but reading data for 147, on about 20 sites. Smaller numbers at each of the three follow-ups because calculations based only on children with complete data ('returners')

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12

Reading test: Reading Recognition subtest of Peabody Individual Achievement Tests

Sample sizes, average standardised scores and s.d's at pre- and post-test and 12-week, 9-month and long-term follow-ups, gains in reading accuracy from pre-test, and effect size post-test vs. pre-test calculated (by GB) using s.d. of standardisation sample (15.0):

	N	average score	(s.d.)	gain	effect size
pre-test vs	147	84.1	(17.0)		
post-test		88.5	(17.9)	4.4	0.29
pre-test vs	101	85.6	(17.6)		
12-week follow-up		92.4	(17.5)	6.8	
pre-test vs	67	84.2	(16.2)		
9-month follow-up		90.3	(18.1)	6.1	
pre-test vs	107	89.6	(11.5)		
long-term follow-up		93.6	(15.2)	4.0	

Ratio gain: n/a

Statistical significances: $p<0.05$ for all differences from pre-test

Starting and ending levels and progress: For the full group of 147 the pre-test average score was below age-related expectation, and the post-test average was just below it; the effect size shows modest progress. The data for pre-test vs 9-month follow-up are probably least reliable because of the small sample. The other follow-up data suggest that some further progress was made in the 3 months following the programme, and sustained 2½–3 years later.

Follow-up: see above

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10 Family Literacy

(2) Hampshire

Main reference: Stepien (1997)

Research design: One-group pre-test/post-test study

Date: 1996-97

Age range: Reception

Type of children: Low attainment

N of experimental group: 27

N of comparison group: (Comparison group mentioned (p. 30) but insufficient data given for analysis)

Equivalence of groups: n/a

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12

Reading test: LARR (Linguistic Awareness and Reading Readiness)

Pre- and post-test average standardised scores, gain in reading accuracy in standardised score points (s.d's not stated), and effect size calculated using s.d. of standardisation sample (15.0):

pre	post	gain	effect size
89.5	118.1	28.6	1.91

Ratio gain: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The pre-test score was just below age-related expectation, while the post-test average was well above it. This remarkable, if not spectacular, progress is reflected in the huge effect size.

Follow-up: (no follow-up)

10 Family Literacy

(3) For New Groups

Main reference: Brooks et al. (1999)

Research design: One-group pre-test/post-test study

Date: 1997–98

Age ranges: (linguistic minorities) 3–6, but reading data reported here only on children of Y1 age; Y4

Type of children: Low attainment

N of experimental group: (linguistic minorities) 65; (Y4) 144

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12

Reading test: (linguistic minorities) Hodder and Stoughton Literacy Baseline;
(Y4) NFER–Nelson Progress in English 9

Pre- and post-test average standardised scores and s.d's, gains (s.d's not stated), and effect sizes calculated (by GB) using s.d. of standardisation sample:

	pre	post	gain	effect size
Linguistic minorities (reading accuracy)				
Average score	93.5	104.3		
(s.d.)	(16.9)	(14.8)	10.8	0.72
Y4 (reading comprehension)				
Average score	87.1	95.8	8.7	0.58
(s.d.)	(14.5)	(16.4)		

Statistical significances: all $p<0.05$

Starting and ending levels and progress: For the Y1 linguistic minority children the pre-test average score was already within the average range, and the post-test was above the norm; this useful progress is reflected in the medium effect size. The Y4 children's pre-test average was just below age-related expectation, and their post-test average was much closer to the norm; again, this useful progress is reflected in the medium effect size.

Follow-up: (no follow-up)

11 FFT Wave 3

Main reference: Canning (2004)

Research design: One-group pre-test/post-test study

Date: 2004

Age range: Y1–3

Type of children: SEN with very low attainment – working at P6 to 1C

N of experimental group: 67 in about 30 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 10

Reading assessment: A range of early reading and writing assessments was used. The one from which an impact measure could be derived, indirectly, was Reading Recovery book levels. All children in England who enter Reading Recovery are now routinely assessed on both RR book levels and the BASWRT, and the Reading Recovery national coordinators at the Institute of Education, University of London have therefore been able to use their large database to correlate book levels with BASWRT reading ages, and these equivalences have been used in this analysis.

Pre- and post-test average RR book levels and r.a's in years and months, gains in book levels and in reading accuracy in months of r.a., and RG:

	pre	post	gain	RG
book levels	2.2	7.9	5.7	
r.a.	5:1	5:8	7	2.8

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Both pre- and post-test average scores show these pupils were not yet functionally literate; for those in Y2–3, in particular, this means they were well behind. They made useful progress, but this would need to be sustained by further quality teaching.

Follow-up: (no follow-up)

12 Five Minute Box

Main reference: Unpublished data supplied by Rosy McVittie via Graham and Jane Kendall

Research design: One-group pre-test/post-test study

Date: 2004–05

Age range: Y1–4

Type of children: Low attainment

N of experimental group: 40 in 4 schools in Southampton

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: (average) 28 (6.5 months used in calculating RG)

Reading test: not stated

Pre- and post-test average r.a's in years and months, gain (presumably in reading accuracy) in months of r.a. (s.d's not stated) and ratio gain:

pre	post	gain	RG
6:8	7:6	10	1.5

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The modest progress brought the average score up from functionally illiterate to semi-literate.

Follow-up: (no follow-up)

13 Further Literacy Support

Main references: Beard et al. (2004, 2005, 2007)

Research design: Unmatched groups pre-test/post-test study

Date: 2003

Age range: Y5

Type of children: Low attainment (level 2a–3 of National Curriculum), approximately bottom 20% of the average class, but not the very lowest attainers (below level 2a)

N of experimental group: 1359 in 161 schools (pre) in 25 LAs,
1054 in 150 of same schools (post)

N of comparison groups: for standardised test, 120 in 5 schools in 1 LA not among those above (pre & post)
otherwise, 4215 in same 161 schools as above (pre),
2600 in same 150 schools as above (post)

Equivalence of groups: For standardised test, the 5 schools 'were from a wide range of socio-economic catchments and were identified through local professional networks. The Ofsted website… was consulted to ensure that their pupil attainment reflected an appropriate range when the schools were last inspected.' (Beard et al., 2007)

For other measures, it seems to have been assumed that both experimental group and larger comparison group would be nationally representative

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12; also 12 weeks between pre- and post-standardised tests (January–March), but about 25 weeks (January–July) between pre- and post-Teacher Assessments

Reading assessments: (standardised test) *Literacy Impact* (Twist and Brill, 2000)
(otherwise) Teacher Assessment scores

Pre- and post-test average scaled reading comprehension scores and s.d's (apparently pooled between pre and post within groups), gains (s.d's not stated), effect size calculated (by GB) as difference in gains divided by comparison group's s.d., and statistical significances of gains and difference as reported by authors:

	FLS	Comparison
N	1054	120
Pre	21.86	31.12
Post	28.92	36.28
(s.d.)	(10.10)	(10.74)
Gains	7.07**	5.17**
Difference in gains	1.90*	
Effect size	0.18	

** = p<0.01; * = p<0.05

Pre- and post-test average Teacher Assessment levels for reading comprehension and s.d's (apparently pooled between pre and post within groups), gains (s.d's not stated), and effect size calculated (by GB) as difference in gains divided by comparison group's s.d. (statistical significances not stated):

	FLS	Comparison
N	1054	2600
Pre	5.11	6.10
Post	6.75	7.57
(s.d.)	(1.81)	(1.71)
Gains	1.64	1.47
Difference in gains	0.17	
Effect size	0.10	

Ratio gains: n/a

Starting and ending levels and progress: The scaled scores do not permit absolute statements about starting and ending levels. However, they do suggest the comparison group was also receiving some help since they made better-than-average progress, but show the experimental group made even better progress. Teacher Assessments also show the experimental group made better progress than a nationally comparable group not receiving the programme. But both effect sizes were very small.

Follow-up: In school year 2003–04 these pupils were followed up in three ways: they were re-tested using the standardised test in April/May 2004; their teachers again provided Teacher Assessments, also in April/May 2004; and their National Curriculum KS2 (age 11) test results were gathered in July 2004.

The average standardised test results, and gains since March 2003, were as follows:

	Reading		
Group	N	average	gain
FLS	574	36.48	8.43
Comparison	109	42.36	6.09

The comparison group's average score was significantly higher than the FLS group's; the slight difference in gain was not statistically significant. However, this does mean that the FLS group had maintained their gain from the previous year.

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In the teacher assessments and KS2 national test results the percentages at each level were as follows for those of the FLS group who could be traced:

National Curriculum level	TA reading (N=516)	KS2 reading (N=516)	KS2 English overall (N=575)
5 and above	20.2%	22.1%	8.7%
4	66.3%	67.3%	75.3%
3	12.7%	9.9%	15.5%
2 and below	0.8%	0.7%	0.5%

There are no comparison data and no way of calculating an impact measure. However, before the programme none of these children would have been predicted to achieve level 4 in reading, yet 89% achieved level 4 or even level 5.

14 Improving Spelling by Teaching Morphemes

(1) The large study

Main reference: Hurry et al. (2005)

Research design: Mainly two-group unmatched groups pre-test/post-test study, with small RCT within it

Date: 2003

Age range: Y3–6

Type of children: Attending inner London primary schools; probably attaining below national average

N of experimental group: 340 (article erroneously says 318) in 17 schools (for breakdown by years, see below)

N of comparison group: 346 in 15 schools, of which 8 were among those above and 7 were different (for breakdown by years, see below)

Equivalence of groups: Mainly not equivalent (but see below for small RCT). The 17 intervention-group teachers were directly recruited; comparison-group teachers were recruited either from the same schools or from teachers who had attended a numeracy course the previous year. However, pre-test average scores were similar except in Y3, where the comparison group had a significantly higher average.

N of alternative intervention group: (no alternative intervention group except within RCT)

Length of intervention in weeks: 7

Spelling test: Experimenter-devised test focusing on the aspects of morphology to be taught

Pre- and post-test average raw spelling scores and s.d's, gains (s.d's of gains not stated), and effect sizes calculated by authors as differences in gains divided by pooled post-test s.d's of experimental and comparison groups:

			pre		post		gain	effect size
Year	group	N	ave.	(s.d.)	ave.	(s.d.)		
3	exps	96	57	(23)	62	(23)	7	0.26
	comps	109	64	(24)	64	(22)	0	
4	exps	129	65	(27)	70	(26)	5	0.15
	comps	57	65	(25)	68	(25)	3	
5	exps	86	72	(21)	76	(20)	4	0.18
	comps	126	74	(22)	76	(19)	2	
6	exps	29	76	(22)	86	(16)	10	0.49
	comps	54	75	(26)	77	(24)	2	
Overall	exps	340	65	(25)	71	(23)	6	0.22
	comps	346	69	(24)	71	(23)	2	

Overall statistical significance as stated by authors: $p<0.001$

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Starting and ending levels and progress: The raw scores do not permit absolute statements about starting and ending levels. However, they do show the experimental group made better progress, though the effect sizes are small or very small.

RCT: within one Y5 class pupils had been randomly assigned to do the morpheme tasks (N=11), an alternative intervention consisting of some comprehension tasks (N=11), or the standard classroom programme (N=12). Pre- and post-test averages (not given in Hurry et al., 2005; supplied by Jane Hurry; s.d's not stated) were:

group	pre	post
morphemes	60	68
comprehension	64	64
control	67	67

Statistical significances: The morphology group made significantly better progress than the others ($p<0.01$).

Starting and ending levels and progress: The raw scores do not permit absolute statements about starting and ending levels. However, they show that groups receiving no morphology training made no progress on this test.

Follow-up: (no follow-up)

14 Improving Spelling by Teaching Morphemes

(2) The small study

Main reference: Hurry et al. (2005)

Research design: Three-group unmatched groups pre-test/post-test quasi-experiment

Date: 2004

Age range: Y4

Type of children: Attending an inner London primary school; probably attaining below national average

N of experimental group: 23 in 1 class in 1 school

N of comparison group: 19 in different class in same school

N of alternative intervention group: 27 in a third class in same school

Nature of alternative intervention: Described as 'NLS [National Literacy Strategy] spelling sessions in addition to their literacy hour' (p. 199); the comparison group did not receive these

Equivalence of groups: Non-equivalent because assigned at class level; however, pre-test differences were allowed for statistically, hence effect sizes considered reliable

Length of intervention in weeks: 13

Spelling test: Experimenter-devised test focusing on the aspects of morphology to be taught

Pre- and post-test average raw spelling scores and s.d's, gains (s.d's of gains not stated), and effect sizes calculated by authors as relevant group's gain minus comparison group's gain over *pooled* post-test s.d's of relevant group and comparison group:

	pre		post		gain	effect size
group	ave.	(s.d.)	ave.	(s.d.)		
exps	41.5	(29)	56	(29)	14.5	1.88
AI	44	(29)	49	(29)	5	0.08
comps	41	(27)	44	(24)	3	

Ratio gains: n/a

Statistical significances as stated by authors: Both experimental ($p<0.001$) and AI ($p<0.02$) groups made statistically significant gains, and the experimental group made a significantly larger gain than either the AI group ($p<0.002$) or the comparison group ($p<0.001$), but the AI group did not make significantly more progress than the comparison group.

Starting and ending levels and progress: The raw scores do not permit absolute statements about starting and ending levels. However, the effect size for the experimental group was spectacularly large.

Follow-up: (no follow-up)

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15 Individual Styles in Learning to Spell

Main reference: P. Brooks and Weeks (1999)

Research design: Two-group pre-test/post-test study

Date: 1996–99

Type of children: Mixed-ability but many with spelling problems

Age range: Y2–3

N of experimental groups: (phase 1) 21; (phase 2) 26, all in 2 schools

N of comparison groups: This was a cross-over design, in which the group of 26 acted as a comparison group for the group of 21 in phase 1, then received the intervention in phase 2. As with BRP in Worcestershire, therefore, the phase 2 data for the first group are follow-up data.

Equivalence of groups: Not equivalent – chosen by teachers – but differences handled statistically (analysis of variance)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: (phase 1) 26; (phase 2) 22

Spelling test: not stated

Average s.a's at pre-test and 2 post-tests and s.d's for pre-test in years and months (other s.d's not stated), gains and s.d's (in months of s.a.), ratio gains for each phase separately, and effect size for 1st phase calculated (by GB) as difference in gains divided by group 2's pre-test s.d. (calculation not possible for 2nd phase because relevant s.d. not stated):

		pre		1st post-test ave.	gain		RG	effect size	2nd post-test ave.	gain		RG
Group	N	ave.	(s.d.)		ave.	(s.d.)				ave.	(s.d.)	
1	21	7:6	(0:11)	8:4	10	(6)	1.7	0.30	9:0	8	(4)	1.6
2	26	6:9	(0:10)	7:4	7	(4)	1.2		8:1	9	(6)	1.8

Statistical significances and progress: The experimental group made significant gains in both phases, the comparison group only in phase 2. In phase 1 the experimental group made significantly more gain than the comparison group; in phase 2 the difference was ns. This was the predicted outcome: both groups made modest gains while receiving the intervention, while the second group made only standard progress in phase 1 before receiving it, and the first group continued to make modest progress in phase 2.

Starting and ending levels: At pre-test, Group 1's average score was in the semi-literate range, and Group 2's just below this. Both were in the semi-literate range at both post-tests, though at 2nd post-test Group 1 was on the verge of functional literacy.

Follow-up: see above

16 Inference Training

(1) Sussex

Main reference: Yuill and Oakhill (1988)

Research design: Matched groups four-group pre-test/post-test quasi-experiment

Date: Autumn 1985–Spring 1986

Age range: Y3

Type of children: Mixed-ability

N of experimental groups: (1) 13 less skilled comprehenders
(2) 13 skilled comprehenders

N of comparison group: (no no-intervention comparison group)

N of alternative intervention (AI) groups: (AI1) 14; (AI2) 12, all in same 5 schools

Nature of alternative interventions: (AI1) comprehension exercises
(AI2) rapid decoding practice

Equivalence of groups: Groups matched on age, reading accuracy and vocabulary; experimental groups deliberately differentiated on reading comprehension

Length of intervention in weeks: 4

Reading test: Neale, form C at pre-test, form B at post-test, thus avoiding specific practice effects over the short interval

Pre- and post-test average r.a's and pre-test s.d's in years and months (post-test s.d's not given), gains (in months of r.a.), and ratio gains:

Aspect of Neale	group	pre-test		post-test	gain	RG
		ave. r.a	(s.d.)	ave. r.a.		
		(yrs & months)			(months)	
accuracy	exps 1	8:2	(0:6)	8:6	4.3	4.3
	exps 2	8:3	(0:6)	8:7	3.9	3.9
	AI1	8:5	(1:2)	8:10	5.0	5.0
	AI2	8:4	(0:5)	8:7	3.0	3.0
comprehension	exps 1	7:3	(0:3)	8:8	17.4	17.4
	exps 2	8:8	(0:8)	9:4	5.9	5.9
	AI1	8:1	(1:0)	8:11	9.6	9.6
	AI2	8:1	(0:7)	8:9	8.2	8.2

Effect sizes: were not stated and could not be calculated reliably because only pre-test s.d's were available and it is clear from inspecting them that the variances were significantly different.

Statistical significances: Poor comprehenders (exps 1) made significantly more progress than good comprehenders (exps 2) ($p<0.001$), and the combined inference training groups (exps 1+2) made significantly more progress than rapid decoding group (AI2) ($p<0.01$).

Starting and ending levels and progress: All pre-test average scores were in the semi-literate range and, except for the deliberate separation of poor and good comprehenders which shows up in the comprehension scores for the two experimental groups, close to c.a. By post-test, one month later, all average scores were well above c.a. The RGs for accuracy show substantial or remarkable progress; those for comprehension show remarkable and, in the case of the poor comprehenders, spectacular progress.

Follow-up: (no follow-up)

16 Inference Training

(2) Leicester

Main reference: Unpublished data supplied by Joanna Lockley

Research design: Unmatched groups two-group pre-test/post-test study

Date: 2006

Age range: Y5–6

Type of children: Low attainment

N of experimental group: 57 in 6 schools

N of comparison group: 18 in 3 of same schools

Equivalence of groups: not stated, but comparison group appears to have been other children in same schools

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 6

Reading test: Neale

Pre- and post-test average scores and s.d's: not stated

Average gains (in months of r.a.), and ratio gains:

	group	gain	RG
accuracy	exps	9.7	6.5
	comps	(not tested)	
comprehension	exps	13.5	9.0
	comps	5.6	3.7

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the RGs show substantial progress for the comparison group in comprehension (the report says all Y6 children were receiving booster sessions as preparation for the KS2 tests), and remarkable progress in both aspects for the experimental group.

Follow-up: (no follow-up)

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17 Integrated Learning Systems, National Council for Educational Technology study

(1) Mainstream, Phase II

Research design: Unmatched groups two-group pre-test/post-test study

Main reference: National Council for Educational Technology (1996)

Date: 1994–96

Age range: Y3–6? ('Key Stage 2'; in School U, Y2 and Y6)

Type of children: Mixed-ability (mostly; in School U, SEN)

N of experimental group: 760 in 7 primary schools in main study (NCET, 1996, p. 12); this certainly includes children involved in numeracy but not literacy – but not clear if it includes comparison group – only 375 experimentals traceable in details of report

N of comparison group: not stated

Equivalence of groups: not stated, except that comparison groups 'were provided by the participating schools'

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: not stated (26 in Schools A and U)

Reading test: Progress in reading comprehension was measured by tests within the programs. These provided '... assessment in terms of "AVG" levels. These represent US grade equivalents and, although preliminary work to reference them to UK measures seems to indicate that they are reasonably accurate, they have been treated with caution by our evaluators' (NCET, 1996, p. 21).

Pre- and post-test average scores and s.d's: not stated

Gains: 'No consistent learning gains' (NCET, 1996, p. 19) in School A (KS2), 30 experimentals (across full primary age range?) made average gain of 8.4 months of r.a. in 6 months – comparison group's average gain was 2.7 months in School U (Y2 and Y6), comparison group *outperformed* experimentals

Ratio gains: RGs overall and for School U were not stated and could not be calculated; for School A, exps: 1.4; comparison group: 0.5

Effect sizes calculated using pooled pre-test s.d's of experimental and comparison groups (for formula used, see NCET, 1996, pp. 6 & 10, footnotes), as stated in report (p. 19):

School A, 0.55 in favour of experimentals;

School U, -0.40, i.e. in favour of comparison group;

report also implies that overall effect size was close to zero and ns, because there were no consistent learning gains

Statistical significances: ns except for Schools A and U

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, in general there was a remarkable *lack* of progress.

Follow-up: (no follow-up)

17 Integrated Learning Systems, National Council for Educational Technology study

(2) Mainstream, Phase III

Main reference: BECTa (1998)

Research design: Unmatched groups two-group pre-test/post-test study

Date: 1996–97

Age range: Y5

Type of children: Mixed-ability

N of experimental group: 193 in 11 schools

N of comparison group: 284 in 19 schools

Equivalence of groups: not matched – pre-test differences handled statistically

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 52

Reading test: not stated, but presumably the same comprehension tests within the programs as in Phase II

Pre- and post-test average standardised scores, gain, and s.d's: not stated

Ratio gain: n/a

Effect size as stated by authors: -0.02

Statistical significances: statistically significant in favour of comparison group even though difference was very small (BECTa, 1998, p. 9)

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the minute effect size shows that in general there was a remarkable *lack* of difference in progress between the groups.

Follow-up: (no follow-up)

17 Integrated Learning Systems, National Council for Educational Technology study

(3) For pupils with low attainments in reading

No data reported here – see section 3.17

18 Interactive Assessment and Teaching (IA&T)

For data on the computerised version of this approach, see RITA, and for a later development, Direct Phonics

Main References: Fawcett et al. (1999), Nicolson et al. (1999)

Research design: Matched groups two-group pre-test/post-test quasi-experiment

Date: not stated (1996–97?)

Age range: Y2–3

Type of children: Low attainment

N of experimental groups: (Y2) 60; (Y3) 36

N of comparison groups: (Y2) 38; (Y3) 51

Equivalence of groups: Comparison groups matched with experimental groups on reading level (Y2: bottom half of class; Y3: <90 on pre-test) and age

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 10

Tests: Wechsler Objective Reading Dimension (WORD) reading and spelling

N, pre- and post-test and 6-month follow-up average standardised scores and s.d's, and effect sizes calculated (by GB) as the difference in gains divided by the relevant comparison group's post-test s.d.:

	Reading accuracy standardised scores				Spelling standardised scores			
group and N	**pre**	**post**	**effect size**	**follow-up**	**pre**	**post**	**effect size**	**follow-up**
Y2								
Experimental N=60	89.03 (3.51)	92.76 (7.46)	0.72	89.93 (8.89)	84.26 (8.97)	91.67 (10.57)	0.56	91.53 (12.53)
Comparison N=38	89.08 (3.96)	88.87 (5.49)		87.03 (10.55)	83.70 (7.82)	85.58 (9.93)		86.18 (10.21)
Y3								
Experimental N=36	79.94 (3.41)	83.31 (3.61)	0.33	83.36 (5.23)	82.64 (5.87)	88.28 (5.11)	0.44	86.64 (6.55)
Comparison N=51	79.49 (5.55)	80.53 (7.01)		81.05 (10.46)	81.19 (7.87)	83.22 (8.22)		83.00 (8.02)

Ratio gains: n/a

Statistical significances: Both experimental groups made significantly greater gains than their comparison groups from pre to post in both reading and spelling.

Starting and ending levels and progress: Pre-test average scores were below age-related expectation for both Y3 groups, just below it for both Y2 groups, and the same was broadly true at post-test. The effect sizes were modest for Y3, useful for Y2. For Y2 both groups' gains were maintained at follow-up in spelling, but in reading the experimentals' gain had been almost completely lost (meanwhile, the comparison group had slipped back even further). For both Y3 groups the gains in reading were maintained, while the spelling gains had been partly lost.

Follow-up: see above

19 Lexia

(1) Norfolk

Main reference: Worsley (2003b)

Research design: One-group pre-test/post-test study

Date: 2003

Age range: Y2–3

Type of children: Low attainment (most had r.a's 2 years or more below c.a.)

N of experimental group: 37 in 13 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 10

Tests used: Salford Sentence Reading Test, revised; Young's Parallel Spelling Test

Pre- and post-test average r.a's in years and months, average s.a's in years and decimal years, gains in months of r.a./s.a. (s.d's not stated), and ratio gains:

	pre	post	gain	RG
reading comprehension	5:1	5:7.4	6.4	2.6
spelling	6.5	6.7	2.4	1.0

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The pre- and post-test average scores were all within the functionally illiterate range. There was useful progress in comprehension, only standard progress in spelling. These children would need systematic further intervention.

Follow-up: (no follow-up)

19 Lexia

(2) York

Main reference: Wilson and Clarke (2005)

Research design: One-group pre-test/post-test study

Date: 2005

Age range: Y2–6

Type of children: Most on SEN register at School Action or School Action Plus

N of experimental group: 42 in 7 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 10

Tests used: Salford Sentence Reading Test, revised; SPAR Spelling Test

Pre- and post-test average r.a's/s.a's in years and months, gains in months of r.a./s.a. (s.d's not stated), and ratio gains:

	pre	post	gain	RG
reading comprehension	6:7	7:3	8	3.0
spelling	7:11	8:4	5	2.0

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The pre-test average score for comprehension was in the functionally illiterate range, while the pre-test average for spelling was in the semi-literate range – it is very unusual for s.a. to be above r.a. but no explanation is offered in the report. For the upper primary pupils in the sample this means they were well behind. There was useful progress in both comprehension and spelling, but post-test scores were all in the semi-literate range and these pupils would need further structured support.

Follow-up: (no follow-up)

20 Multi-sensory Teaching System for Reading (MTSR)

(1) Initial study in 3 LEAs in North-West England

Main references: Johnson et al. (1999) and unpublished data supplied by Mike Johnson

Research design: (Y2) one-group pre-test/post-test study; (Y5) unmatched groups two-group pre-test/post-test study

Date: not stated

Age range: Y2, Y5

Type of children: Low attainment

N of experimental group: (Y2) 25 in 4 schools; (Y5) 18 in 3 schools

N of comparison group: (no comparison group)

Nature and N of Y5 alternative intervention (AI) group: 'Beat Dyslexia' (no details available), N = 17 in 3 schools; (no Y2 AI group)

Equivalence of groups: (Y2) n/a; (Y5) not stated, but appear to be non-equivalent opportunity samples in different schools

Length of intervention in weeks: 8

Tests used: (reading) Macmillan Individual Reading Analysis; (spelling) Vernon

Pre- and post-test average r.a's/s.a's and s.d's: not stated

Gains (in months of r.a./s.a.) and ratio gains:

			gain	RG
Y2	reading comprehension	exps	9.0	4.5
	spelling	exps	4.2	2.1
Y5	reading comprehension	exps	4.3	2.2
		AI	3.4	1.7
	spelling	exps	-7.3	-3.6
		AI	6.7	3.4

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. The RGs mostly show useful to substantial progress, including for the AI group in Y5. However, the experimental group in Y5 experienced a remarkable falling-back in spelling – but compare the next entry.

Follow-up: (no follow-up)

20 Multi-sensory Teaching System for Reading (MTSR)

(2) Bolton

Main references: Johnson et al. (1999) and unpublished data supplied by Mike Johnson

Research design: One-group pre-test/post-test study

Date: not stated (2001–02?)

Age range: Y2

Type of children: Low attainment

N of experimental group: 66 in 12 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 26

Tests used: (reading) Neale Analysis; (spelling) Single Word Spelling Test

Pre- and post-test average r.a's/s.a's and s.d's: not stated

Gains (in months of r.a./s.a.) and ratio gains:

	gain	RG
reading accuracy	22.1	3.7
reading comprehension	23.4	3.9
spelling	80.5	13.4

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the RGs show substantial progress in reading and spectacular progress in spelling – but compare the previous entry.

Follow-up: (no follow-up)

20 Multi-sensory Teaching System for Reading (MTSR)

(3) Southampton

Main reference: Unpublished data supplied by Rosy McVittie via Graham and Jane Kendall

Research design: One-group pre-test/post-test study

Date: 2004–05

Age range: Y2–6

Type of children: Low attainment

N of experimental group: 64 in 5 schools in Southampton

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: (average) 34 (8 months used in calculating RG)

Reading test: not stated

Pre- and post-test average r.a's in years and months, gain (presumably in reading accuracy) in months of r.a. (s.d's not stated) and ratio gain:

pre	post	gain	RG
7:0	8:1	13	1.6

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Pre- and post-test average scores are both within the semi-literate range. For the upper primary pupils in the sample this means they were well behind. The progress made was modest, so all these pupils would need further structured support.

Follow-up: (no follow-up)

21 Paired Reading in Kirklees

Main reference: Topping and Lindsay (1992)

Research design: Mainly a one-group pre-test/post-test study, but partly a matched-groups two-group pre-test/post-test quasi-experiment because some experimental groups had matched comparison groups

Date: 1984–87

Age range: not stated but known to be across full school age range (Y1–11); also known to be mainly primary and therefore included here and not under secondary level

Type of children: Mixed-ability

N of experimental group: 2372 in 155 projects in 71 schools for main accuracy measure – for other N, see below

N of comparison group: 446 in 37 projects for main accuracy measure – for other N, see below

Equivalence of groups: Method not stated, but thought to be matched groups

N of alternative intervention group: (some projects had alternative intervention groups, but too numerous and disparate to report here)

Nature of alternative interventions: (impractical to summarise)

Length of intervention in weeks: (average) 9

Reading tests: Many, including Burt, Holborn, Neale, New Macmillan Reading Analysis, Primary, Salford, Schonell, Standard (Daniels & Diack) 1, Standard (Daniels & Diack) 12, Widespan

Pre- and post-test average scores and s.d's, and gains (not given in principal original report because too numerous):

Ratio gains:	**accuracy**		**comprehension**	
	N	**RG**	**N**	**RG**
all experimentals	2372	3.3	690	4.3
experimentals in comparison-group projects	580	3.4	170	4.6
comparison groups in comparison-group projects	446	2.0	159	2.5

Effect sizes as stated by authors and calculated using s.d. of comparison group gain:

	accuracy	**comprehension**
N of projects (N of children not given)	34	12
effect size	0.87	0.77

However, mean effect size for published studies in the literature (12 controlled studies) is 2.12 (Keith Topping, personal communication, 4 July 2002)

Statistical significances: All ratio gains were highly statistically significant ($p<0.001$) for both accuracy and comprehension (Keith Topping, personal communication, 10 August 1998).

Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels. However, the large effect sizes and the RGs show substantial progress for the experimental groups, while the RGs for the comparison groups show useful progress.

Follow-up: The Kirklees project provided follow-up data on 272 children in 17 projects. In follow-ups at less than 17 weeks after the end of the interventions, 102 children in 7 projects averaged RGs during the follow-up period of 2.0 for accuracy and 2.3 for comprehension. In follow-ups at more than 17 weeks, 170 children in 10 projects averaged RGs during the follow-up period of 1.2 for accuracy and 1.4 for comprehension.

22 Parental Involvement in Reading in Haringey

Main references: Tizard, Schofield and Hewison (1982), Hewison (1988)

Research design: Matched groups four-group pre-test/post-test quasi-experiment

Date: 1976–78

Age range: Y2–3

Type of children: Mixed-ability

N of experimental group: 51 in 2 schools

N of main comparison group: 86 in same schools

N of alternative intervention (AI) group: 45 in 2 different schools

Nature of alternative intervention: Extra teacher help with reading

N of comparison group for alternative intervention: 66 in same schools as AI group

Equivalence of groups: The 4 schools were assigned at random to experimental and alternative intervention groups; then one Y2 class in each was chosen randomly to receive the experimental or alternative intervention; other Y2 classes became the comparison group; pre-test data showed that experimental and alternative intervention groups did not differ from their respective comparison groups

Length of intervention in weeks: 104

Reading tests: (pre-test) Southgate; (post-test) NFER Reading Test A

Pre-test scores and gains: not shown because different tests used pre and post

Post-test average standardised scores and s.d's for reading accuracy, and effect sizes calculated (by GB) as differences between post-test average scores divided by post-test s.d's of comparison groups:

	ave. stand. score	(s.d.)	effect size
experimentals	104.2	(10.8)	0.84
main comparison group	95.0	(11.0)	
AI (extra teacher help)	99.3	(16.6)	0.09
comparison group for AI	98.1	(13.7)	

Ratio gains: n/a

Statistical significances: At post-test, experimentals significantly higher than main comparison group, alternative intervention group vs their comparison group ns

Starting and ending levels and progress: Without pre-test data it is impossible to characterise the starting levels or progress made. However, the post-test average scores were all within the average range, with the experimentals' score above the national norm. Their effect size shows substantial progress, the AI group's was minute.

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1-year follow-up, July 1979 (Tizard et al., 1982)**:**

Sample sizes, average scores on NFER Reading Test BD and s.d's:

	N	**average score (reading accuracy)**	**(s.d.)**
Experimentals	66	99.0	(10.5)
Comparison group	78	91.6	(11.0)
AI (extra teacher help)	37	96.3	(12.3)
Comparison group for AI	58	92.9	(12.6)

Statistical significances: Experimentals were significantly better than their comparison group; the AI group and their comparison group did not differ.

3-year follow-up, July 1981 (Hewison, 1988):

Sample sizes, average scores on London Reading Test (national norms) and s.d's:

	N	**average score (reading comprehension)**	**(s.d.)**
Experimentals	41	101.0	(11.9)
Comparison group	69	94.5	(13.5)
AI (extra teacher help)	34	98.9	(14.3)
Comparison group for AI	56	97.3	(11.3)

Statistical significances: Experimentals were significantly better than their comparison group; the AI group and their comparison group did not differ.

It would seem that the experimental group maintained their relative position at both follow-ups.

23 Personalised Learning

(1) Y3

Main reference: Unpublished data supplied by Linda Perry and Carole Price

Research design: One group pre-test/post-test study

Date: January–March 2006

Age range: Y3

Type of children: All on SEN register with very low literacy scores. Criterion for inclusion in project was that they were working towards level 1 in reading. Many had complex needs, such as ADHD, autism, dyslexia, or speech and language difficulties

N of experimental group: 69 in 45 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12

Reading test: Reading Progress Test (Hodder and Stoughton)

Pre- and post-test average r.a's and s.d's (in years and months), gain in reading comprehension in months of r.a. (s.d. not stated), and ratio gain:

pre		post		gain	RG
average	(s.d.)	average	(s.d.)		
5:11	(0:7)	6:10	(0:9)	11	3.7

Effect size: n/a

Statistical significances: $p<0.001$

Starting and ending levels and progress: These Y3 pupils were not yet functionally literate at pre- or post-test, and started about 18 months behind in r.a. They made a substantial gain in 3 months.

Follow-up: (no follow-up)

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23 Personalised Learning

(2) Y1

Main reference: Unpublished data supplied by Linda Perry and Carole Price

Research design: One group pre-test/post-test study

Date: January–March 2007

Age range: Y1

Type of children: Many children were on SEN register and had very low literacy scores. A considerable number were also unsure of many of the basic aspects of literacy, e.g. letter knowledge, concepts of print, etc. Criterion for inclusion in the project was that they were working towards level 1 in reading/writing. Many had complex needs, such as ADHD, autism, dyslexia, speech and language difficulties

N of experimental group: 23 in 13 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12

Reading test: Reading Progress Test (Hodder and Stoughton)

Pre- and post-test average r.a's and s.d's (in years and months), gain in reading comprehension in months of r.a. (s.d. not stated), and ratio gain:

pre		post		gain	RG
average	(s.d.)	average	(s.d.)		
5:5	(0:7)	6:5	(0:8)	12	4.0

Effect size: n/a

Statistical significances: $p<0.001$

Starting and ending levels and progress: These Y1 pupils were not yet functionally literate at pre- or post-test, and started several months behind in r.a. They made a substantial gain in 3 months.

Follow-up: (no follow-up)

24 Phono-Graphix™

(1) Bristol

Main references: Derrington (2001a, b) and unpublished data supplied by Sue Derrington

Research design: Three one-group pre-test/post-test studies

Date: 2000–02

Age range: Y1–6

Type of children: Low attainment

N of experimental group: 230 in 13 schools – for year-groups, see below

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks:

Y1	26	(6 months used in calculating RG)
Y4–6	17	(4 months used in calculating RG)
Y2–6	12	(3 months used in calculating RG)

Tests:

(Y1)	Carver WRAPS tests
(Y4–6) (reading)	NFER-Nelson Individual Reading Analysis; (spelling) Vernon
(Y2–6) (reading)	Neale Analysis and Individual Analysis; (spelling) not stated

Pre- and post-test average r.a's/s.a's in years and months, gains in months of r.a./s.a. (s.d's and some other data not stated), and ratio gains:

			Reading accuracy				Reading comprehension			
age	**date**	**N**	**pre**	**post**	**gain**	**RG**	**pre**	**post**	**gain**	**RG**
Y1	2000–01	141			13m	2.2				
Y4–6	2000–01	15	7:0	8:11	23m	5.8	7:11	9:4	17m	4.3
Y2–6	2001–02	74	6:4	8:5	25m	8.3	7:1	9:0	25m	8.3
			Spelling							
age	**date**	**N**	**pre**	**post**	**gain**	**RG**				
Y2–6	2001–02	60	6:9	7:7	10m	3.3				

(subset of reading group above)

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

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Starting and ending levels and progress: Without pre- or post-test data it is impossible to characterise the starting and ending levels for the Y1 group; they made useful progress. For the other groups, all pre-test average scores for reading were in the functionally illiterate range, while those for spelling were in the semi-literate range. Given that these groups included Y6 children, some were well behind. By post-test the reading scores were in the semi-literate range, while the spelling scores were in the functional range. They had made remarkable progress in reading and substantial progress in spelling, but many would still need further structured support.

Follow-up: (no follow-up)

24 Phono-Graphix™

(2) Surrey

Main reference: www.readamerica.net – accessed 14/8/02

Research design: One-group pre-test/post-test study

Date: 1999–2000

Age range: Y4

Type of children: SEN (children with dyslexia)

N of experimental group: 12 in one independent specialist school for children with dyslexia

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 26

Reading test: Macmillan Graded Word Reading

Pre- and post-test average r.a's (s.d's not given), gain in reading accuracy (in months of r.a) and ratio gain:

pre	post	gain	RG
6:4	8:7	27	4.5

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: At pre-test these Y4 pupils were not yet functionally literate. They made remarkable progress, and by post-test their average score was in the semi-literate range and approaching the functional level.

Follow-up: (no follow-up)

25 Phonological Awareness Training

Main reference: Wilson and Frederickson (1995)

Research design: Matched groups two-group quasi-experiment

Date: 1995?

Age range: Y4–7 (Y1–3 also using programme but not included in evaluation); data not given separately for year groups, therefore included here and not under secondary level

Type of children: Special educational needs (all on at least Stage 2 of Code, including some severe learning difficulties and some mild learning difficulties)

N of experimental group: 24 in 3 schools

N of comparison group: 24 in 3 schools

Equivalence of groups: 'Allocation to the PAT programme or the comparison group... was made by the special needs coordinators... [They] were asked to try to ensure an even distribution between the PAT and comparison groups..., with comparable levels of reading difficulty and... of special educational provision...'

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 20

Reading test: BASWRT

Pre- and post-test average r.a.'s and pre-test s.d's in years and months (post-test s.d's not given), gains in reading accuracy (in months of r.a.), s.d's of gains, ratio gains, and effect size calculated (by GB) using difference in average gains divided by comparison group's pre-test s.d.:

	pre		**post**	**gain**		**RG**	**effect**
	ave.	(s.d.)	ave.	ave.	(s.d.)		size
exps	6:7	(0:6)	7:0	5.5	(3.7)	1.1	0.16
comps	6:9	(0:7)	7:1	4.4	(4.3)	0.9	

Statistical significances: Difference between gains of experimental and comparison groups was significant, $t=1.73$, $p<0.05$, even though very small, as confirmed by the effect size.

Starting and ending levels and progress: At pre-test neither group was functionally literate, and at post-test both groups were at the threshold of semi-literacy. Both groups made only standard progress; the very small effect size confirms that the difference in gains was not impressive even though statistically significant.

Follow-up: (no follow-up)

26 Phonology with Reading

Main reference: Bowyer-Crane et al. (2007, in press)

Research design: RCT

Date: not stated (c.2003–04?)

Age range: Reception

Type of children: At risk of reading difficulties because of poor speech and language at school entry

N of experimental group: 71

N of control group: (no no-intervention control group)

N of alternative intervention group: 75

Nature of alternative intervention: An oral language (OL) programme comprising instruction in vocabulary, comprehension, inference generation and narrative skills

Equivalence of groups: 960 children in 23 schools screened initially; 8 lowest-scoring children from 19 of the schools (= 152 children) pre-tested, and allocated at random to experimental or AI group; 6 dropped out before post-test.

Length of intervention in weeks: 20

Reading test: Early Word Recognition (EWR) Test (Hatcher et al., 1994) pre & post; reading comprehension and prose reading accuracy, post only. Comprehension test consisted of reading aloud two stories, one each taken from Neale Analysis of Reading Ability, 2nd edn., and Gray Oral Reading Tests, 4th edn., and answering 9 questions based on them. A measure of prose reading accuracy was taken while the children read the stories aloud.

EWR: pre- and post-test average raw scores and s.d's, gains in reading accuracy (s.d's of gains not stated), and effect size calculated (by GB) as difference in gains divided by post-test s.d. of AI (Oral Language) group:

	pre		post		gain		effect size	follow-up	
Group	Exp.	AI	Exp.	AI	Exp.	AI		Exp.	AI
ave.	4.88	3.04	21.08	16.27	16.20	13.23	0.32	27.07	22.72
(s.d.)	(7.0)	(3.55)	(12.71)	(9.33)					

Accuracy and comprehension: post-test average raw scores, s.d's and differences, and effect size calculated (by GB) as difference in post-test scores divided by post-test s.d. of AI (Oral Language) group:

		post		difference	effect size
		Exp.	AI		
acc	average	28.45	23.28	5.17	0.51
	(s.d.)	(13.02)	(10.16)		
comp	average	5.11	4.72	0.39	0.25
	(s.d.)	(1.86)	(1.54)		

Ratio gains: n/a

Statistical significances: EWR: $p<0.05$ when index of behaviour entered as predictor in model
Accuracy: $p<0.05$
Comprehension: ns (consistent with small effect size)

Starting and ending levels and progress: Raw scores do not permit characterisation of starting and ending levels. The experimental group made better progress than the AI group on both tests of word reading.

Follow-up: Five months after end of programme, comprehension and accuracy tests were not repeated. On EWR, experimental group still had higher average score than AI group (27.07 vs 22.72) but no longer statistically significant.

Note: The experimenters also used many other tests, mainly of language, some of which showed significant effects.

27 RAPID

Main references: Smith, Styles and Morris (2007) and personal communication from Marian Morris via Cath Haynes

Research design: Cluster RCT (see entry in chapter three)

Date: 2007

Age range: Y3–6

Type of children: Low attainment ('Working between National Curriculum levels 1C and 2A/3C in reading')

N of experimental group: 418 in 52 schools across the 4 countries of the UK

N of control group: 368 in 49 schools across the 4 countries of the UK

Equivalence of groups: Fully equivalent – schools were randomly assigned to experimental or control

N of alternative intervention group: (no alternative intervention group as such, but all the control schools were using extra resources with those of their pupils who were in the study, including a few using other intervention schemes analysed in this report – see the entry for RAPID in chapter three).

Length of intervention in weeks: 10

Tests used: Suffolk A (pre) and B (post)

Pre- and post-test average raw scores and s.d's, gains in reading comprehension (s.d's not stated), and effect sizes reported by authors:

		pre	post		gain	effect sizes
experimental	30.5	(1.3)	35.2	(1.1)	4.7	0.12/0.10 *
control	32.6	(1.4)	36.0	(1.4)	3.4	

* The first effect size derives from a statistical model accounting only for pupil-level variance, the second from a model accounting for both pupil- and school-level variance

Pre- and post-test average r.a's and s.d's: not stated

Gains in reading comprehension in months of r.a. and ratio gains:

	gain	RG
experimental	5.7	2.5
control	4.4	1.9

Statistical significances: p=0.012, ns

Starting and ending levels and progress: Raw scores, and absence of pre- and post-test r.a's, do not permit characterisation of starting and ending levels. The RGs show that the experimental group made useful progress and the control group only modest progress, but the effect size was very small and the difference in progress was statistically non-significant.

Follow-up: (no follow-up)

28 Read Write Inc.

(1) Bristol

Main references: www.bristol-cyps.org.uk/teaching/sen/pdf/sen_wave3_report.pdf and unpublished data supplied by Sue Derrington

Research design: One-group pre-test/post-test study

Date: 2004–05

Age range: Y2–6

Type of children: SEN

N of experimental group: 117 in 12 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: not stated, and varied between schools, but average appears to have been about 8.

Tests used: NFER Individual Reading Analysis (KS1), Neale (2nd UK edition, accuracy and comprehension) (KS2), Vernon Spelling Test (both)

Pre- and post-test average r.a's/s.a's, gains and s.d's: not stated

Ratio gains:

reading accuracy	2.3
reading comprehension	2.6
spelling	1.7

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Absence of pre- and post-test scores does not permit characterisation of starting and ending levels. The pupils made useful progress in reading, modest progress in spelling.

Follow-up: (no follow-up)

28 Read Write Inc.

(2) Haringey 1

Main reference: Unpublished data supplied by Christa Rippon via Jean Gross

Research design: One-group pre-test/post-test study

Date: 2003–04

Age range: Y5–6

Type of children: Low attainment; some had r.a. several years below c.a.

N of experimental group: 30 in 7(?) schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 20 (5 months)

Reading test: Neale

Pre- and post-test average r.a's in years and months, gain (presumably in reading accuracy) in months of r.a. (s.d's not stated) and ratio gain:

pre	post	gain	RG
6:3	7:10	19	3.8

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The pre-test average score was in the functionally illiterate range, and many of the pupils were several years behind. They made a substantial gain, and their post-test average score was in the semi-literate range. Many would need further structured support.

Follow-up: (no follow-up)

28 Read Write Inc.

(3) Haringey 2

Main reference: Unpublished data supplied by Christa Rippon

Research design: One-group pre-test/post-test study

Date: 2006

Age range: Y3–6

Type of children: Low attainment; some had r.a. several years below c.a.

N of experimental group: 21 in 1 school

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12 (3 months)

Reading test: New Salford

Pre- and post-test average r.a's in years and months, gain in reading comprehension in months of r.a. (s.d's not stated) and ratio gain:

pre	post	gain	RG
5:1	6:4	15	5.0

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The pre-test average score was in the functionally illiterate range, and many of the pupils were several years behind. They made a remarkable gain, but their post-test average score was still in the functionally illiterate range. They would all need further structured support.

Follow-up: (no follow-up)

29 Reading Intervention (originally Cumbria Reading with Phonology Project)

(1) (The original) Cumbria Reading with Phonology Project

Main reference: Hatcher, Hulme and Ellis (1994)

Research design: RCT

Date: September 1989–May 1990

Age range: Y2 ('third year of infant schooling')

Type of children: Low attainment (reading quotient, r.a./c.a. x 100, on Carver test less than 86, but those with reading quotient less than 71 and percentile rank below 25 on Raven's Coloured Progressive Matrices (1965) excluded)

N of experimental group: 32 (received both reading programme and Phonological Training)

N of control group: 31

N of alternative intervention (AI) groups: (AI1) 31; (AI2) 30

Nature of alternative interventions: (AI1) reading programme only (similar to Reading Recovery as then taught, i.e. without phonology, hence the contrast with AI2 and the experimental condition); (AI2) phonology only (Phonological Training)

Equivalence of groups: Groups matched on reading ability; other factors (IQ, age) treated as co-variates in analysis of post-test differences

Length of intervention in weeks: 20 (but 25 weeks between start and end and 30 weeks between pre- and post-test; 7 months used in calculating RG)

Tests used: (reading) BASWRT form A, Neale revised form 1; (spelling) Schonell Graded Word Spelling Test, List B

Pre- and post-test and 9-month follow-up average r.a's/s.a's and s.d's in years and decimal years:

		R&P (N = 32)		Reading (N = 31)		Phonology (N = 30)		Control (N = 31)	
BAS	pre	5.85	(0.53)	5.90	(0.47)	5.90	(0.57)	5.96	(0.53)
acc	post	6.73	(0.85)	6.56	(0.43)	6.55	(0.69)	6.60	(0.67)
Neale	pre	5.10	(0.21)	5.04	(0.19)	5.18	(0.43)	5.11	(0.30)
acc	post	6.13	(1.00)	5.78	(0.54)	5.81	(0.90)	5.66	(0.80)
	follow-up	6.77	(1.58)	6.22	(0.82)	6.31	(1.03)	6.25	(1.15)
Neale	pre	5.29	(0.30)	5.32	(0.34)	5.43	(0.50)	5.41	(0.49)
comp	post	6.39	(0.92)	6.00	(0.97)	5.94	(0.80)	5.88	(0.73)
	follow-up	6.99	(1.28)	6.47	(0.94)	6.46	(1.11)	6.35	(0.97)
Schonell	pre	5.78	(0.59)	5.83	(0.50)	5.93	(0.56)	5.77	(0.55)
splg	post	6.77	(0.93)	6.54	(0.55)	6.66	(0.63)	6.49	(0.74)
	follow-up	7.19	(1.02)	6.90	(0.62)	6.99	(0.82)	6.92	(0.78)

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Gains (in months of r.a./s.a.), ratio gains, and effect sizes calculated (by GB) as differences in gain relative to control group divided by post-test s.d's of control group:

test	group	gain (months)	RG	effect size
BASWRT	exps	10.6	1.5	0.36
acc	conts	7.7	1.1	
	AI1	7.9	1.1	0.03
	AI2	7.8	1.1	0.01
Neale	exps	12.4	1.8	0.60
acc	conts	6.6	0.9	
	AI1	8.9	1.3	0.23
	AI2	7.6	1.1	0.10
Neale	exps	13.2	1.9	0.86
comp	conts	5.6	0.8	
	AI1	8.2	1.2	0.29
	AI2	6.1	0.9	0.05
Schonell	exps	11.9	1.7	0.36
splg	conts	8.6	1.2	
	AI1	8.5	1.2	-0.01
	AI2	8.8	1.3	0.01

Statistical significances: On all 4 post-test measures, experimentals' gains were significantly better than other 3 groups'; those groups' gains did not differ significantly.

Starting and ending levels and progress: At pre-test all average scores were in the functionally illiterate range, and well below c.a. The experimental group made modest progress, the other groups at best only standard progress. At post-test all average scores were still in the functionally illiterate range, but the experimental group's scores were much closer to c.a.

Follow-up: Experimentals made no further relative gain between post-test and follow-up, but maintained the advantage gained during the intervention. However, inspection of the follow-up means reveals that the gains over post-test were slight – all groups, including the experimentals, were making less than standard progress.

29 Reading Intervention

(2) General use in Cumbria since the original project

Main reference: Hatcher (2000)

Research design: One-group pre-test/post-test study

Date: 1994–98

Age range: Y2–10; data not given separately by year groups, therefore included here and not under secondary level

Type of children: Low attainment

N of experimental group: 427, including 73 statemented (see next entry)

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12

Tests used: (Reading) Burt, 1974 revision; (Spelling) Schonell

Pre- and post-test average r.a's/s.a's and s.d's: not stated

Gain in months of r.a./s.a. (s.d's not stated) and ratio gains:

	gain	RG
Reading accuracy	6.1	2.0
Spelling	7.9	2.6

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Absence of pre- and post-test scores does not permit characterisation of starting and ending levels. The pupils made useful gains.

Follow-up: (no follow-up)

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29 Reading Intervention

(3) For statemented children (subset of those in (2) above)

Main reference: Hatcher (2000)

Research design: Matched-groups four-group pre-test/post-test quasi-experiment

Date: 1994–98

Age range: Y2–10; data not given separately by year groups, therefore included here and not under secondary level

Type of children in experimental groups: SEN – all statemented, children with Moderate Learning Difficulties (MLD) or dyslexia (DYS)

Nature and Ns of experimental and comparison groups:

		N
MLD (IQ in range 55–75)		28
Comparison group for MLD	(Comp 1)	27
Children with dyslexia (DYS)		29
Comparison group for DYS	(Comp 2)	29

Equivalence of groups: Each experimental child was matched (from a pool of 351) with a teacher-referred child with an equivalent score on four pooled literacy assessments and of same gender: also of similar age where possible

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12

Tests used: (reading) Burt, 1974 revision; (spelling) Schonell

Average pre- and post-test r.a's/s.a's in years and decimal years (s.d's not stated), gains in months of r.a./s.a. (s.d's not stated) – these data only for experimental groups, and ratio gains for all groups as stated by author:

group	**N**		**word reading accuracy**	**spelling**
			r.a. (yrs & decimal yrs)	s.a. (yrs & decimal yrs)
MLD	28	Pre	6.1	6.2
		Post	6.5	6.8
		Gain	4.8m	7.2m
		RG	1.4	2.4
Comps 1	27	RG	1.7	3.0
DYS	29	Pre	6.6	6.8
		Post	7.4	7.4
		Gain	9.6m	7.2m
		RG	2.9	2.1
Comps 2	29	RG	3.0	3.2

Effect sizes: were not stated and could not be calculated

Statistical significances as stated by author (some based on data not presented here): For reading, DYS made a significantly greater gain than MLD, but neither experimental group differed significantly from its comparison group. For spelling, DYS and MLD did not differ, and MLD did not differ from its comparison group, but DYS made significantly less gain than its comparison group.

Starting and ending levels and progress: Given the ages of these children, the pre-test average r.a's and s.a's for the experimental groups mean they were not only not yet functionally literate but many years behind. Most gains were substantial, but the MLD group and their comparison group made only modest progress in reading. By post-test the DYS group (but not the MLD group) had moved into the semi-literate range for both reading and spelling.

Follow-up: (no follow-up)

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30 Reading Recovery

(1) London and Surrey

N.B. Relative to both previous versions, this entry has been substantially revised, including being expanded to include results of the Neale test, in the light of Hurry and Sylva (2007), which must now be considered the definitive account of this study.

Main references: Sylva and Hurry (1995a, b), Hurry and Sylva (1998, 2007)

Research design: Two interventions (Reading Recovery and Phonological Training) in separate groups of schools were each compared with two comparison groups, one in the same schools, the other in different schools. Mainly quasi-experimental because most groups were not created by random allocation – but see below for an RCT within one part of the study

Date: 1992–93

Age range: Y2

Type of children: Low attainment

N.B. All the following Ns are those obtaining at 1st post-test; all were slightly larger at pre-test, and progressively slightly smaller at one-year and three-year follow-ups.

N of experimental group: 89 in 22 schools (out of the only 24 schools in England which were using Reading Recovery at the time) in seven LAs in south-east England, six in Greater London (Bexley, Greenwich, Hammersmith and Fulham, Islington, Wandsworth, Westminster), plus Surrey – but only 72 in 17 schools for within-school comparisons because 5 schools had no within-school comparison pupils

N of comparison groups: (1) 40 in same schools; (2) 152 in different schools, = 109 in 18 other schools in same LAs + 43 in alternative intervention schools

N of alternative intervention (AI) group: 92 in 23 schools in same LAs

Nature of alternative intervention: Phonological Training (so-called in the 2007 article but Phonological Intervention in all earlier reports)

N of comparison/control groups for alternative intervention: (1) 43 in same schools (comparison group); (2) the same 109 children as above in 18 other schools (control group)

Equivalence of groups: In each LA which had Reading Recovery schools in 1992, the primary adviser identified (mostly) two schools with similar intakes to each Reading Recovery school; these were assigned randomly to be Phonological Training schools (N=23) or comparison schools (N=18) – this part of the design did not constitute an RCT because the sample in the Phonological Training schools was subdivided – read on. In each of the 63 schools the 6 poorest readers (roughly the bottom 20%) in Y2 were identified using Clay's Diagnostic Survey (Clay, 1985). In the 22 Reading Recovery schools, those children (usually 4) with the lowest scores were given the programme, while the others were allocated to the within-schools comparison group. In the 23 Phonological Training schools the 6 poorest readers were allocated randomly to receive the programme (N=4) or to the within-schools comparison group (N=2); this part of the design was therefore an RCT, while all other parts were quasi-experimental. Pupils in the 18 schools receiving neither programme all belonged to the between-schools comparison group.

Length of intervention in weeks: (average) 21 (but average 9 months between pre-test in Sept/Oct 1992 and post-test in May–July 1993). One-year follow-up took place in May–July 1994, and three-year follow-up in Sept–Dec 1996.

Tests used: (reading) BASWRT, Neale (comprehension) at pre- and post-test and one-year follow-up, NFER-Nelson Group Reading Test 6–12 at three-year follow-up; (spelling) not tested at pre- and post-test, British Ability Scales Spelling test at one-year follow-up, Young's Parallel Spelling Test at three-year follow-up

Reading results

Pre- and post-test and 12-month follow-up average r.a's in years and months (s.d's not stated) on BASWRT, gains in reading accuracy over previous test (in months of r.a.), ratio gains at post-test, and effect sizes and statistical significances at post-test and follow-up allowing for differences on pre-test as stated in Hurry and Sylva (2007):

	pre-test	post-test gain			RG	effect size †	1-year follow-up		effect size †
Group	**N**	**r.a.**	**r.a.**				**r.a.**	**gain**	
(1)	70/89	4:11	6:4	17	1.9		6:11	7	
(2)	40	5:3	6:1	10	1.1	0.81***	7:0	11	0.25
(3)	152	5:6	6:1	7	0.8	0.84***	6:11	10	0.41***
(4)	92	5:1	5:11	10	1.1		6:10	11	
(5)	43	5:4	6:0	8	0.9	0.08	6:11	11	0.13
(6)	109	5:6	6:1	7	0.8	0.16	6:11	10	0.27**

† Upper effect size in each pair is for group (1) vs (2) or group (4) vs (5); lower effect size is for group (1) vs (3) or group (4) vs (6)

N = sample size at post-test (for the variable N, see above); *** = p<0.001; ** = p<0.01

Key to groups: (1) Reading Recovery; (2) within-schools comparison group for Reading Recovery; (3) between-schools comparison group for Reading Recovery; (4) Phonological Training; (5) within-schools comparison group for Phonological Training; (6) between-schools comparison group for Phonological Training

Pre- and post-test and 12-month follow-up average raw scores and s.d's on Neale, gains in reading comprehension over previous test in points of raw score, and effect sizes and statistical significances at post-test and follow-up allowing for differences on pre-test as stated in Hurry and Sylva (2007):

		pre-test		post-test		gain	Effect size †	1-year follow-up			effect size †
Group	**N**	**ave.**	**(s.d.)**	**ave.**	**(s.d.)**			**ave.**	**(s.d.)**	**gain**	
(1)	70/89	0	(1)	11.3	(6.6)	11.3		19.5	(11.3)	8.2	
(2)	40	2	(3)	10.7	(9.7)	8.7	0.63**	20.1	(14.8)	9.4	0.26
(3)	152	2	(3)	9.2	(7.9)	7.2	0.78***	18.9	(13.2)	9.7	0.49***
(4)	92	1	(3)	7.2	(8.5)	6.2		17.1	(13.3)	9.9	
(5)	43	1.5	(3)	8.1	(7.5)	6.6	0.13	18.8	(12.7)	10.7	0.10
(6)	109	2	(3)	9.7	(8.1)	7.7	0.09	19.0	(13.5)	9.3	0.22**

† Upper effect size in each pair is for group (1) vs (2) or group (4) vs (5); lower effect size is for group (1) vs (3) or group (4) vs (6)

N = sample size at post-test (for the variable N, see above); *** = p<0.001; ** = p<0.01

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Key to groups: (1) Reading Recovery; (2) within-schools comparison group for Reading Recovery; (3) between-schools comparison group for Reading Recovery; (4) Phonological Training; (5) within-schools control group for Phonological Training; (6) between-schools comparison group for Phonological Training

Starting and ending levels and progress: Unusually, here the pre-test raw scores on the Neale do permit characterisation of the starting level: since almost all Y2 pupils would score on this test, the fact that almost all these children did not means they were well behind. This is confirmed by the very low pre-test r.a's on the BASWRT.

Between pre- and post-test Reading Recovery group made a modest gain in accuracy (RG=1.9) and substantially greater progress than both comparison groups in accuracy (BASWRT) and comprehension (Neale), as shown by the effect sizes; Phonological Training group and their control/comparison groups made only standard progress, if that, and did not differ in progress on these tests.

At the one-year follow-up, the Reading Recovery children were no longer ahead of, but had still made significantly better progress than, the between-schools comparison group on both tests, but had no longer made significantly better progress than the within-schools comparison group. And by this point the Phonological Training group had made significantly better progress than their between-schools comparison group on both tests, but had still not made significantly better progress than their within-schools control group.

Average comprehension r.a's (s.d's not stated) on NFER-Nelson test at three-year follow-up, and effect sizes and statistical significances as stated in Hurry and Sylva (2007):

	3-year follow-up		**effect size †**
group	**N**	**r.a.**	
(1)	63/89	8:4	
(2)	35	8:7	0.17
(3)	137	8:8	0.15
(4)	81	8:3	
(5)	38	8:7	0.03
(6)	99	8:7	0.21

† Upper effect size in each pair is for group (1) vs (2) or group (4) vs (5); lower effect size is for group (1) vs (3) or group (4) vs (6)

N = sample size (for the variable N, see above); ** = $p<0.01$; * = $p<0.05$

Key to groups: (1) Reading Recovery; (2) within-schools comparison group for Reading Recovery; (3) between-schools comparison group for Reading Recovery; (4) Phonological Training; (5) within-schools comparison group for Phonological Training; (6) between-schools comparison group for Phonological Training

For commentary, see below.

Spelling results

Average raw scores and s.d's at one-year follow-up on BAS Spelling Test, average s.a's (s.d's not stated) on Young's test at three-year follow-up, and effect sizes and statistical significances at both stages as stated in Hurry and Sylva (2007):

	1-year follow-up			effect size †	3-year follow-up		effect size †
group	**N**	**ave.**	**(s.d.)**		**N**	**s.a.**	
(1)	68/91	17.8	(7.0)		63/89	8:7	
(2)	34	18.9	(9.0)	0.18	35	8:11	0.04
(3)	150	18.2	(9.2)	0.32**	137	8:10	0.11
(4)	88	17.1	(9.2)		81	8:8	
(5)	43	18.0	(8.2)	0.16	38	8:9	0.07
(6)	107	18.2	(9.6)	0.27*	99	8:9	0.27*

† Upper effect size in each pair is for group (1) vs (2) or group (4) vs (5); lower effect size is for group (1) vs (3) or group (4) vs (6)

N = sample size (for the variable N, see above); ** = $p<0.01$; * = $p<0.05$

Key to groups: (1) Reading Recovery; (2) within-schools comparison group for Reading Recovery; (3) between-schools comparison group for Reading Recovery; (4) Phonological Training; (5) within-schools comparison group for Phonological Training; (6) between-schools comparison group for Phonological Training

At the one-year follow-up, both Reading Recovery and Phonological Training groups were significantly ahead of their between-schools comparisons groups in spelling, but neither was ahead of its within-schools comparison/control group.

At the three-year follow-up, neither the Reading Recovery nor the Phonological Training group was significantly better in general than their respective control/comparison groups on reading or spelling, the only exception being that the Phonological Training group had a significantly higher average score than their between-school comparison group on spelling.

However, within the Reading Recovery group, children who had been complete non-readers at the pre-test in 1992 did stay ahead of comparable children in the comparison groups – but this was not true of such children within the Phonological Intervention group. 'For the children who were not reading at all at 6 years old, Reading Recovery was more effective [for reading] at every follow-up point than for slightly better readers' (Hurry and Sylva, 2007).

But then again, given that at the three-year follow-up the average chronological age was 10:3, all groups were well behind national norms in both reading and spelling: '[I]t would appear that, in the long-term, neither of the interventions had allowed the children to overcome their poor start with reading' (Hurry and Sylva, 2007) – or, it should be added, to keep up in spelling.

The What Works Clearinghouse (2007) meta-analysis contained one study, an RCT, in which children were followed up at the end of 3rd grade, two years after the end of the programme (Baenen et al., 1997). No significant advantage was found for Reading Recovery.

However, for more positive follow-up findings, see the 1997–98 cohort and Reading Recovery in Britain and Ireland, below.

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30 Reading Recovery

(2) Bristol

Main reference: Fudge (2001)

Research design: One-group pre-test/post-test study

Date: 1999–2001

Age range: Y1–2

Type of children: Low attainment

N of experimental group: 145 in 21 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 20

Reading test: WRAPS (Word Recognition and Phonic Skills)

Pre- and post-test scores and s.d's: not stated

Gain in reading accuracy (in months of r.a): 14.5

Ratio gain: 2.9

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The absence of pre- and post-test scores does not permit characterisation of the starting and ending levels. However, the RG shows useful progress.

Follow-up: (no follow-up)

30 Reading Recovery

(3) The 1997–98 cohort

N.B. Only follow-up data are given in this entry, hence the absence of several headings

Main reference: Douëtil (2004)

Research design: One-group follow-up only study

Date: 1997–98

Age range: Y1

Type of children: Low attainment (bottom 20%)

N of experimental group: 1,451 in an unknown number of schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12–20

Follow-up: These children were followed up in 1999 at the end of KS1, and a sub-sample of 651 again in 2003 at the end of KS2. Their KS1 reading results were as follows.

	Children who had been successfully discontinued (had 'achieved accelerated learning')		**Children who had not been successfully discontinued or had not completed the programme**		**Total**	
Level	N	%	N	%	N	%
3	14	1	0	0	14	1
2a	149	14	2	1	151	10
2b	330	30	16	5	346	24
2c	389	35	46	14	435	30
1	228	20	225	67	453	31
W	4	<1	48	14	52	4
Total	1114	100	337	100	1451	100

Source: Adapted from Douëtil (2004)

Given that these children had made very little progress in their first year at school, and most would have been predicted to reach level W or 1, these results suggest considerable benefit for the children who had completed Reading Recovery (80% at level 2 or 3), and a need to provide further support for the rest.

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The KS2 reading results were as follows.

	Children who had 'achieved accelerated learning'		Children who had not 'achieved accelerated learning'		Total	
Level	N	%	N	%	N	%
5	53	12	12	6	65	10
4	207	47	59	28	266	41
3	116	27	69	32	185	28
2	1	<1	3	1	4	<1
None	60	14	71	33	131	20
Total	437	100	214	100	651	100

Source: Adapted from Douëtil (2004)

These results suggest that most of the children who had completed Reading Recovery had maintained their gains (59% at Level 4 or 5). The fact that 34% of those who had not completed the programme also achieved those levels suggests either a sleeper effect or that many had received further specialist support. The 49% of the full sample who had not yet achieved Level 3 would need some further support in secondary school.

(4) Every Child a Reader in London

Main references: Burroughs-Lange (2006), Every Child a Reader (undated but known to have been published in 2006)

Research design: Matched groups two-groups pre-test/post-test quasi-experiment

Date: 2005–06

Age range: Y1

Type of children: Low attainment – bottom 5–6% of the national distribution. (N.B. The standardised scores quoted below were derived **within** the sample, and are therefore **not**, despite appearances, close to the national average.)

N of experimental group: 87 in 21 schools in 5 London boroughs (Brent, Greenwich, Hackney, Hammersmith and Fulham, Southwark)

N of comparison group: 147 in 21 schools in 5 other London boroughs (Barking and Dagenham, Haringey, Islington, Lambeth, Lewisham)

N of alternative intervention group: (no alternative intervention group)

Equivalence of groups: All 10 boroughs were volunteers, but those in the experimental group already had some RR provision while the comparison boroughs did not (but were to implement it in 2006–07); the two groups were similar in population characteristics and KS1 achievement levels. In the RR boroughs the schools which already had an RR teacher (N=21) were chosen to participate. In the comparison boroughs, the nominated schools (N=21) were those thought to be most in need of the programme. In each of the 42 schools, the lowest-attaining Y1 class was nominated to participate, and the 8 children in that class thought to be poorest in literacy were chosen for the study. The two samples of schools were very similar in terms of number on roll, number in Y1, percentage of children on free school meals, and percentage of children having English as an additional language. The samples of children were very similar in terms of average age and gender balance – unusually for this sort of study, there were almost equal numbers of boys and girls. At pre-test the average scores for the experimental group were slightly higher than for the comparison group, as shown in Table 6 of Burroughs-Lange (2006). The differences were 2 standardised score points on both tests, and 2 months of age on WRAPS (there was no difference on BASWRT r.a.), and the returners' BASWRT pre-test standardised score was statistically significantly higher than the comparison group's. The differences were handled statistically in calculating results.

Length of intervention in weeks: not stated, and it would in any case be standard RR practice for this to vary between 12 and 20 weeks, according to individual children's needs; interval of 10 months (Sept–July) between pre- and post-test used to calculate RGs.

Literacy tests used: BASWRT, WRAPS (Word Recognition and Phonic Skills). BASWRT was given only to the experimental and comparison groups. WRAPS was given to all the children in the Y1 classes in the study (N in RR schools = 605, N in comparison schools = 566), but here only the results for the experimental and comparison groups are analysed.

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Pre- and post-test BASWRT r.a's/WRAPS ages and s.d's, gains in reading accuracy in months of r.a./WRAPS age (s.d's not stated), ratio gains, and effect sizes calculated using the pooled post-test s.d's:

			pre-test		post-test		gain	RG	effect size
Test	group	**N**	**ave.**	**(s.d.)**	**ave.**	**(s.d.)**			
BASWRT	exps	87	4:11	(0:2)	6:7	(0:9)	20	2.0	1.50
	comps	147	4:10	(0:2)	5:3	(0:9)	5	0.5	
WRAPS	exps	87	4:11	(0:6)	6:3	(0:8)	16	1.6	0.76
	comps	147	4:10	(0:6)	5:7	(0:9)	9	0.9	

Both tests: Pre- and post-test standardised scores and s.d's, gains in standardised score points (s.d's not stated), and effect sizes calculated using the pooled post-test s.d's:

		pre-test			post-test		gain	effect size
Test	group	**N**	**ave.**	**(s.d.)**	**ave.**	**(s.d.)**		
BASWRT	exps	87	103 *	(16)	111 *	(15)	8	1.30
	comps	147	99 *	(15)	94 *	(11)	-5	
WRAPS	exps	87	100.3*	(15.4)	107 *	(14)	6.7	0.84
	comps	147	100 *	(15)	96 *	(13)	-4	

* N.B. These standardised scores were calculated for these samples of children, and are therefore *not*, despite appearances, close to national norms. The r.a's/WRAPS ages above show these children were well behind.

Statistical significances: All four of the experimental group's post-test average scores were statistically significantly higher than the comparison group's.

Starting and ending levels and progress: As already noted, the pre-test r.a's/WRAPS ages show these children were well behind – on average they were still absolute non-readers and non-spellers. The experimental group made significantly more progress. This is not surprising because all relevant figures show that the comparison group had made less than standard progress (ratio gains below 1.0, decrease in standardised scores) and therefore was falling relatively further behind. All six impact measures for the experimental group show that they had made substantial to remarkable progress. At post-test the experimental group's scores were at or near c.a., while the comparison group was still well behind.

It is worth noting also that the complete Y1 classes in RR schools had made significantly better progress than those in the comparison schools, as shown by the average WRAPS scores (not reported here) – a useful halo effect.

Follow-up: (was scheduled for July 2007)

30 Reading Recovery

(5) Reading Recovery across Britain and Ireland

Main reference: Douëtil (2006)

Research design: One-group pre-test/post-test study

Date: 2005–06

Age range: Y1–2

Type of children: Low attainment

N of experimental group: 3566 in an unknown number of schools across the 5 jurisdictions

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 18.5 on average (4.5 months used in calculating RG)

Literacy tests used: BASWRT

Pre- and post-test BASWRT r.a's in years and months, gain in reading accuracy in months of r.a. (s.d's not stated), and ratio gain:

pre	post	gain	RG
4:10	6:5	19	4.2

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: As expected, the pre-test average shows that most of these children were non-readers. The post-test average is what would be expected of the average child at the beginning of Y2, and some of these children were already in Y2. However, the RG shows that on average they had made remarkable progress.

Follow-up: Of the 3566 children, 3015 (85%) were 'successfully discontinued' or 'achieved accelerated learning', as earlier and current Reading Recovery parlance has it (= had made enough progress to leave the programme and not to be referred for further assessment and more specialist help), and had their RR book levels assessed; the average book level, 17.1, following the method described under FFT Wave 3 above, equates to an average r.a. on the BASWRT of 6:7. Varying numbers of these children were followed up:

1. 3 and 6 months after leaving Reading Recovery, when their RR book levels were assessed again, and
2. (for Y2 children in England only) when they took the KS1 national tests in summer 2006; at this point their KS1 reading and writing scores were gathered.

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The average RR book levels and BASWRT r.a's at discontinuation and 3- and 6-month follow-ups were:

Stage	N	% of those who began programme	RR book level		BASWRT
			average	(s.d.)	r.a.
discontinuation	3015	85%	17.1	(2.6)	6:7
3-month follow-up	1440	40%	18.9	(3.4)	6:10
6-month follow-up	516	14%	20.7	(3.9)	7:1

Though the sample sizes fall off steeply, the BASWRT data show exactly standard progress: 1 month of r.a. gained for each month elapsed. In other words, having returned to their classes, those children who could be traced and assessed were on average keeping up with their peers.

KS1 results were gathered for 1076 children. For their writing results, see entry 59 below. The reading results, which include children who were still only part way through their Reading Recovery programme when they took national assessments, were as follows:

Level	N	%
3	14	1.3
2a	97	9.0
2b	300	27.9
2c	329	30.8
1	310	28.8
W	26	2.4

The percentage achieving below level 2 was 31.2%, compared to the national figure of 16% (see chapter one), but the latter figure contains the whole attainment range, while the Reading Recovery figure by definition refers only to a limited sub-sample who started off well behind, and therefore represents considerable success and progress.

31 Reciprocal Teaching

Main reference: Unpublished data supplied by Christa Rippon

Research design: One-group pre-test/post-test study

Date: 2002–03

Age range: Y3–6

Type of children: Low attainment

N of experimental group: 88 in an unstated number of schools in Haringey

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: Ranged from 16 to 52 (overall RGs were calculated as the average of the individual children's RGs)

Reading test: Neale (accuracy and comprehension)

Pre- and post-test average r.a's and s.d's in years and decimal years, gains and s.d's in months of r.a., and ratio gains:

	pre		post		gain		RG
	average	**(s.d.)**	**average**	**(s.d.)**	**average**	**(s.d.)**	
accuracy	9.9	(1.8)	11.1	(1.6)	16	(14)	2.4
comprehension	8.6	(1.4)	10.7	(1.8)	25	(21)	3.7

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The pre-test scores show these children were on average already functionally literate for accuracy and almost there for comprehension, but the r.a. for comprehension is what would be expected of the average child at the beginning of Y4; given the age range this means that many were well behind (but fewer in accuracy). The post-test scores are at Y6 level for both accuracy and comprehension, so many must by then have been at least at c.a. The RGs show useful progress in accuracy and substantial progress in comprehension.

Follow-up: (no follow-up)

32 RITA (Reader's Intelligent Teaching Assistant)

The data for IA&T here are identical to those for the pre- and post-test in the entry for IA&T above.

Main reference: Nicolson et al. (1999)

Research design: Matched groups two-group pre-test/post-test quasi-experiment

Date: not stated (1997–98?)

Age range: Y2–3

Type of children: Low attainment

N of experimental groups: (Y2) 58; (Y3) 16, in 4 schools in total

N of comparison groups: (Y2) 58; (Y3) 45, in different schools

N of alternative intervention groups: (Y2) 59; (Y3) 36, in same 4 schools and classes as experimentals but in previous year

Nature of alternative intervention: called 'Traditional' in Nicolson et al. (2000) but actually the experimentals in Interactive Assessment and Teaching (IA&T) – see separate entry

Equivalence of groups: Matched on age and reading performance

Length of intervention in weeks: 10

Tests used: Wechsler Objective Reading Dimension (WORD) reading and spelling

N, pre- and post-test average standardised scores and s.d's, and effect sizes calculated (by authors) using *pooled pre-test* s.d's:

	Reading accuracy Standard Score					Spelling Standard Score				
Intervention type	**pre-test**		**post-test**		**effect size**	**pre-test**		**post-test**		**effect size**
	ave.	**s.d.**	**ave.**	**s.d.**		**ave.**	**s.d.**	**ave.**	**s.d.**	
Y2										
RITA	89.60	3.41	90.81	3.61	0.30	80.19	6.67	88.66	8.91	0.98
comps	89.74	4.01	89.41	5.30		84.49	8.65	86.24	9.79	
AI (IA&T)	89.03	3.51	92.76	7.46	0.94	84.26	8.97	91.67	10.57	0.95
Y3										
RITA	79.69	3.50	87.13	12.21	1.34	78.38	5.50	84.44	8.02	0.77
comps	79.49	5.55	80.53	7.01		81.19	7.87	83.22	8.22	
AI (IA&T)	79.94	3.41	83.31	3.61	0.61	82.64	6.67	88.28	8.91	0.72

Ratio gains: n/a

Statistical significances: Experimentals and AI groups in both year groups made significantly greater gains than comparison group; experimental and AI groups did not differ

Starting and ending levels and progress: Average pre-test scores were below age-related expectation for Y3 generally and Y2 spelling, just below it for Y2 reading accuracy. Average post-test scores for the comparison group show hardly any progress, while those for the RITA and IA&T groups mainly show substantial to remarkable progress, up into the average range in the case of IA&T reading. However, computerising the intervention did not produce extra progress.

Follow-up: (no follow-up)

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33 SIDNEY

Main references: Norgate and Bentote (2005) and unpublished data supplied by Roger Norgate

Research design: One-group pre-test/post-test study

Date: 2004

Age range: Y1–2

Type of children: Low attainment, on average

N of experimental group: 66 children in 14 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12

Reading and phonics (including spelling) test: WRAPS

Pre- and post-test average WRAPS ages in years and months and standardised scores, gains in accuracy in months of WRAPS age/standardised score points, s.d's, ratio gain, effect size calculated (by GB) using s.d. of standardisation sample, and statistical significance:

	pre		post		gain		RG	effect size	p
WRAPS age	5:0	(0:6)	5:7	(0:7)	7	(7)	2.3		
ss	91.9	(11.2)	98.3	(10.8)	6.4	(12.5)		0.43	<0.001

Starting and ending levels and progress: At pre-test these children had scarcely made a start on literacy; by post-test they were just above the level of an average child in Y1, but had made useful progress, as shown by both the RG and the effect size.

Follow-up: (no follow-up)

34 Somerset Self-esteem and Reading Project

(1) 1st study

N.B. Lawrence treated the 'counselling only' group as the main experimental group in this study. However, for consistency with his other studies, that group has here been described as the first alternative intervention group (AI1), while the 'counselling plus remedial teaching' group has been treated as the experimental group.

Main references: Lawrence (1973, pp. 44-56) – statistical data are more accurate in this version than in the original report (Lawrence, 1971), but details of interventions are derived from both, and from Lawrence (1988)

Research design: Matched groups four-group pre-test/post-test quasi-experiment

Date: 1970 (see Lawrence, 1988, p. 10)

Age range: Y4 (average ages of groups at beginning, presumably early in school year, were between 8:7 and 8:11)

Type of children: Low attainment ('considered by their head teachers to be retarded in reading')

N of experimental group: 12 in 1 school – but 11 at post-test

(received self-esteem counselling – 20 minutes' individual interview per week, with a professional psychologist – plus remedial teaching – 30 minutes, once a week, in groups of 5 or 6, primarily phonics)

N of comparison group: 12 in 1 school

N of alternative intervention (AI) groups: (AI1) 12 in 1 school
(AI2) 12 in 1 school – but 11 at post-test

Nature of alternative interventions:

(AI1) self-esteem counselling alone (20 minutes' individual interview per week, with same psychologist as experimentals)

(AI2) remedial teaching alone (30 minutes, twice a week, in groups of 5 or 6, primarily phonics, with same teacher as experimentals)

Equivalence of groups: Groups matched on age, sex, mental age (non-verbal IQ) and reading age, but each group was in a separate school

Length of intervention in weeks: 26

Reading test: Schonell Word Recognition Test

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Pre- and post-test average scores (r.a's), pre-test s.d's (post-test s.d's not given), gains in reading accuracy (in months of r.a.), ratio gains, and effect sizes calculated using differences between gains over control group's pre-test s.d.:

	pre-test		post-test average	gain (months)	RG	effect size
	average	(s.d.)				
exps	6:11	(1:2)	7:9	10	1.7	0.33
comps	6:6	(1:3)	6:11	5	0.8	
AI1	6:10	(1: 1)	7:11	13	2.2	0.53
AI2	6:8	(1:4)	7:5	9	1.5	0.27

Statistical significances (ns = non-significant; p = probability; U = Mann-Whitney 'U' test value; ? = not stated):

	comps		AI1		AI2	
	U	p	U	p	U	p
exps	?	?	50	ns	34	ns
comps			2	<0.001	?	?
AI1					30	<0.01

No reason given for not stating comparison vs experimental and comparison vs AI2 (remedial phonics only) values; professional counselling plus remedial phonics was no better than counselling only (AI1) or remedial phonics only (AI2); but professional counselling only was better than remedial phonics only or no intervention, and equal to professional counselling plus remedial phonics.

Starting and ending levels and progress: All pre-test scores were in the functionally illiterate range, and about 2 years below c.a.; by post-test all but the comparison group's score had moved into the semi-literate range but were still well below c.a. The RGs and effect sizes show that the AI1 group (counselling alone) had made useful progress, and the experimental and AI2 groups modest progress. Meanwhile the comparison group had made less than standard progress.

Follow-up: (no follow-up)

34 Somerset Self-esteem and Reading Project

(2) 2nd study

Main references: Lawrence (1973, pp.56-65) – some details of interventions derived from Lawrence (1972)

Research design: Matched groups two-group pre-test/post-test quasi-experiment

Date: not stated (1970?)

Age range: Y4 (average ages of groups at beginning ranged from 8:10–9:6)

Type of children: Low attainment ('considered to be retarded in reading')

N of experimental group: 14, 7 in each of 2 schools (received counselling provided by non-professionals, plus remedial teaching)

N of comparison group: (no no-intervention comparison group)

N of alternative intervention group: 14, 7 in each of same 2 schools (received remedial teaching only)

Equivalence of groups: Matched on age, sex, mental age and reading age, within schools

Length of intervention in weeks: 18 (but 26 between pre- and post-test)

Reading test: Schonell Word Recognition Test

Pre- and post-test average r.a's and pre-test s.d's in years and months (post-test and gain s.d's not given), gains in reading accuracy (in months of r.a.), ratio gains, and between-groups effect size calculated (by GB) as difference in gain divided by AI group's *pre-test* s.d.:

	pre-test		post-test average	gain	RG	effect size
group	average	(s.d.)				
exps	7:0	(1:9)	8:0	12	2.0	0.09
AI	6:10	(1:11)	7:8	10	1.7	

Statistical significances: ns, i.e. counselling by non-professionals plus remedial teaching was no better than remedial teaching alone

Starting and ending levels and progress: Both pre-test scores were near the top of the functionally illiterate range, and about 3 years below c.a.; by post-test both had moved into the semi-literate range but were still well below c.a. The RGs show that both groups had made modest progress, and the tiny effect size confirms that the experimental group had not made better progress than the AI group.

Follow-up: (no follow-up)

34 Somerset Self-esteem and Reading Project

(3) 3rd study

Main references: Lawrence (1973, pp.65-74) – some details of interventions derived from Lawrence (1972)

Research design: Matched groups two-group pre-test/post-test quasi-experiment

Date: not stated (1971?)

Age range: Y3–4 (average ages of the groups at beginning ranged from 7:10 to 9:7)

Type of children: Low attainment ('considered to be retarded in reading')

N of experimental group: 24, 6 in each of 4 schools (received counselling provided by non-professionals, plus remedial teaching)

N of comparison group: (no no-intervention comparison group)

N of alternative intervention group: 24, 6 in each of same 4 schools (received remedial teaching only)

Equivalence of groups: Matched on age, sex, mental age and reading age, within schools

Length of intervention in weeks: 17

Reading test: Schonell Word Recognition Test

Pre- and post-test average r.a's and pre-test s.d's in years and months (post-test and gain s.d's not given), gains in reading accuracy (in months of r.a.), ratio gains, and between-groups effect size calculated (by GB) as difference in gain divided by AI group's *pre-test* s.d.:

	pre-test		post-test average	gain	RG	effect size
	ave.	(s.d.)				
exps	6:11	(1:10)	7:11	12	3.0	0.38
AI	6:10	(2:0)	7:1	3	0.8	

Statistical significances: $p<0.05$, i.e. counselling by non-professionals plus remedial teaching was better than remedial teaching alone

Starting and ending levels and progress: Both pre-test scores were near the top of the functionally illiterate range, and between 1 and 3 years below c.a.; by post-test both had moved into the semi-literate range (the AI group only just) but were still well below c.a. The RGs show that the experimental group had made substantial progress and the AI group less than standard progress, and the effect size, though small, confirms that the experimental group had made better progress than the AI group.

Follow-up: (no follow-up)

[N.B. A further study reported in Lawrence and Blagg (1974) was considered too small to be included – see chapter four.]

34 Somerset Self-esteem and Reading Project

(4) 4th study

N.B. For the successor programme to DISTAR, see Corrective Reading

Main references: Lawrence (1985); some details from Lawrence (1988)

Research design: Possibly RCT since (unstated) method of allocation to groups seems to have been random assignment

Date: 1984 (see Lawrence, 1988, p. 11)

Age range: Y3–4? ('eight-year-olds')

Type of children: Low attainment (all with reading quotient (r.a./c.a. x 100) below 85)

N of experimental group: 94 in 8 schools (received DISTAR as AI2, plus self-esteem counselling for 45 minutes once a week, in pairs, from one of 35 non-professional counsellors)

N of comparison group: 78

N of alternative intervention (AI) groups: (AI1) 79; (AI2) 84

Total N of pupils: Ns above total 335; Lawrence (1985, p. 194) says 374, Lawrence (1988, p. 11) says 372 – but these may represent total number at pre-test

N of schools: Lawrence (1985, p. 194) gives total number of schools across all 4 groups as 29; Lawrence (1988, p. 11) gives number of experimental schools as 8; separate numbers for other 3 groups nowhere stated

Nature of alternative interventions:

(AI1) DISTAR as AI2, plus drama teaching designed to enhance self-esteem, for about 45 minutes once a week, in groups of 7–15, given by County Adviser for Drama

(AI2) DISTAR only, in groups of 6–10, for one hour, 3 times per week, from teachers trained by a manager of the accredited UK providers of DISTAR training

Equivalence of groups: Not stated, but appears to have been random assignment of pupils to groups

Length of intervention in weeks: 20

Reading test: Burt Word Recognition Test (Vernon revision, 1973)

Pre- and post-test average scores and s.d's: not stated

Gains in reading accuracy (in raw score), s.d's of gains, and effect sizes calculated (by GB) using differences between gains divided by s.d. of comparison group's *gain*:

gain in raw score	**effect**		
	average	(s.d.)	size
experimentals	14.3	(6.4)	0.92
comparison group	8.8	(6.0)	
AI1	11.8	(6.6)	0.50
AI2	10.7	(5.1)	0.32

Ratio gain: n/a

Statistical significances: Experimentals and AI1 made significantly greater gains than other two groups. 'Therapeutic' conditions (experimentals = counselling plus DISTAR; AI1 = drama plus DISTAR) did not differ, and were better than DISTAR only (AI2) and no intervention (comparison group), which also did not differ.

Starting and ending levels and progress: Raw scores, and absence of pre- and post-test r.a's, do not permit characterisation of starting and ending levels. The experimental group's effect size shows substantial progress, while those for the alternative intervention groups were small.

Follow-up: (no follow-up)

35 Sound Discovery®

(1) Norfolk

Main reference: Worsley (2005b)

Research design: One group pre-test/post-test study

Date: 2005

Age range: Y2–5 (also one child in Y7, excluded from analyses)

Type of children: Pupils struggling with literacy skills, including some with SEN

N of experimental group: 38 in 11 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12

Tests used: Salford Sentence Reading Test, 3rd edn.; Young's Parallel Spelling Tests

Pre- and post-test average reading ages in years and months (s.d's not stated), gain in reading comprehension in months of r.a., and ratio gain:

	pre	post	gain	RG
Reading comprehension	5:9	6:6	9	3.0

Pre- and post-test average spelling ages in years and decimal years (s.d's not stated), gain in months of s.a., and ratio gain:

	pre	post	gain	RG
Spelling	6.9	7.3	5	1.7

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Both pre-test average scores, and the post-test average for comprehension, were in the functionally illiterate range, while the post-test average for spelling had moved into the semi-literate range. The progress made was useful in reading, modest in spelling.

Follow-up: (no follow-up)

35 Sound Discovery®

(2) Bedfordshire

Main reference: Unpublished data supplied by Jo Padbury via Marlynne Grant

Research design: Two one-group pre-test/post-test studies

Dates: (1) 2005–06; (2) 2006–07

Age range: (1) Y6; (2) Y5

Type of children: Low attainment

N of experimental groups: (1) 114 in 1 middle school; (2) 126 in same school

N of comparison groups: (no comparison groups)

N of alternative intervention groups: (no alternative intervention groups)

Length of intervention in weeks: (1) 22 (9 months between pre- and post-test, Sept 2005–June 2006, used in calculating RG); (2) 10 (4 months between pre- and post-test, Sept 2006–January 2007, used in calculating RG)

Tests used: (Y6) Hodder Reading Tests 2A & B, NFER-Nelson Single Word Spelling Test F;

(Y5) NFER-Nelson Single Word Spelling Test E

Pre- and post-test average r.a's, s.a's and s.d's in years and months, gains in reading comprehension and spelling and s.d's in months of r.a./s.a., and ratio gains:

			pre		post	gain		RG
Y6	comp	10:1	(1:11)	11:1	(1:8)	12	(11)	1.3
	spelling	9:4	(1:8)	10:5	(1:8)	13	(11)	1.4
Y5	spelling	9:6	(1:9)	10:2	(1:8)	8	(7)	2.0

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Though already in the functionally literate range, the pre-test averages scores show these children were slightly behind. The Y6 group made little more than standard progress, and were therefore still relatively about as far behind at post-test. The Y5 group made useful progress, and were catching up to the average for their age.

Follow-up: The Y6 cohort was re-tested on spelling in January 2007, 7 months after the end of the programme. Their average s.a. was now 10:8 – they had made 6 months gain, or a fraction under standard progress, but had therefore mostly maintained the small gain made during the programme.

36 Sounds~Write

Main reference: www.sounds-write.co.uk/smallstudy.asp

Research design: Unmatched groups two-group pre-test/post-test study

Date: 2005

Age range: Y1

Type of children: Mixed-ability

N of experimental group: 24 in one school in Northamptonshire

N of comparison group: (no no-intervention comparison group)

N of alternative intervention (AI) group: 27 in the other Y1 class in same school

Equivalence of groups: Not equivalent – just the 2 classes

Nature of alternative treatment: *Progression in Phonics* (PiPs)

Length of intervention in weeks: 5

Tests used: Burt Reading Test, Young's Parallel Spelling Test

Pre- and post-test average r.a's/s.a's and s.d's: not stated

Gains (in months of r.a./s.a.) and ratio gains:

		gain	**RG**
reading acc.	exps	3.3	3.3
	AI	0.9	0.9
spelling	exps	2.7	2.7
	AI	1.2	1.2

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The absence of pre- and post-test scores does not permit characterisation of starting and ending levels. The experimental group's RGs show they made useful to substantial progress, while those for the alternative intervention group show they made barely standard progress. However, *Progression in Phonics* has now been superseded by *Letters and Sounds*.

Follow-up: (no follow-up)

37 SPELLIT

Main references: Rack and Hatcher (2002a, b)

Research design: Matched groups three-group pre-test/post-test quasi-experiment (not quite an RCT because some children moved between groups after random allocation)

Date: 1999–2000

Age range: Y2–4

Type of children: Low attainment ('reading and spelling in the lower 10% on standardised tests')

N of experimental group: 51

N of comparison group: 58

N of alternative intervention group: 41

Nature of alternative intervention group: 'Home Support Programme consisting of activities and exercises to be done at home for around 15 minutes a day, for 5 days a week over a 30 week period'

Equivalence of groups: Children were allocated at random, with some minor adjustment to achieve a balance of age, IQ, etc., in the three groups

Length of intervention in weeks: 30, but 39 on average between pre- and post-test

Reading test: BASWRT

Pre- and post-test average r.a's in years and decimal years (s.d's not stated), gains in reading accuracy in months of r.a., and ratio gains:

group	r.a. pre	r.a. post	gain (in months of r.a.)	RG
exps	5.77	6.69	11	1.2
comps	5.85	6.37	6	0.7
AI	5.80	6.58	9	1.0

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: All the average scores, pre and post, were in the functionally illiterate range, and the RGs show that none of the groups made real progress; indeed, the comparison group fell further behind.

Follow-up: (no follow-up)

38 The Early Reading Research

(1) Key Stage 1 study

Main reference: Solity and Shapiro (2006, in press)

Research design: Matched groups two-group pre-test/post-test quasi-experiment

Date: 1996–98 (The children involved started school in three groups, in September 1996 and January and April 1997. The study began in October 1996, and ran to June 1999, when all the children ended Y2. The intervention took place while the children were in Y1, and was withdrawn in Y2.)

Age range: Y1

Type of children: Lowest 25% within TERR and comparison groups according to their total literacy score in June 1998 (i.e. they were identified retrospectively)

N of experimental group: 45 in 6 schools in 1 LA

N of comparison group: 36 in 6 schools in same LA

Equivalence of groups: TERR schools expressed preference for the intervention. Comparison schools were matched with them for percentage of children on free school meals and socio-economic status of intake

N of alternative treatment group: (no alternative treatment group)

Length of intervention in weeks: Intervention for 35 weeks during Year 1 (8 months used in calculating RG). Intervention withdrawn in Year 2

Reading test: BASWRT 1

Pre- and post-test and one-year follow-up average r.a's and s.d's in years and months, gains in reading accuracy in months of r.a., ratio gains and effect sizes calculated (by GB) as difference in gain divided by respectively post-test and one-year follow-up s.d's of comparison group:

group	pre		post		gain	RG	effect size	follow-up		gain	RG	effect size
	ave.	(s.d.)	ave.	(s.d.)				ave.	(s.d.)			
TERR	5:0	(0:1)	5:8	(0:4)	8	1.0	3.5	6:8	(0:5)	12	1.0	0.17
comps	5:0	(0)	5:1	(0:2)	1	0.1		6:0	(0:6)	11	0.9	

Statistical significances: During Y1 the TERR group low achievers significantly outperformed comparison-group low achievers, $p<0.001$. The significance of the 2nd year difference was not stated, but would be ns.

Starting and ending levels and progress: Both groups were virtually non-readers at pre-test, and the comparison group still were at post-test. The spectacular but statistically not very reliable effect size at post-test is due to the comparison group having made almost no progress and showing hardly any variance, while the TERR group made standard progress but still ended up below the level expected at the end of Y1. One year later, both groups had made just standard progress but the TERR group had maintained their lead.

Follow-up: see above

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38 The Early Reading Research

(2) Key Stage 2 studies

Main references: Solity et al. (2000) and Solity and Shapiro (2006, in press) for description of programme as originally devised for Reception and Y1; analysis below based on unpublished data supplied by Jonathan Solity

Research design: Three one-group pre-test/post-test studies

Date: 2002–04

Age range: (1) Y3–4; (2) Y4–5; (3) Y5–6 – all groups studied longitudinally over 2 school years

Type of children: Low attainment, the bottom 25% in their classes

N of experimental groups: (1) 21; (2) 23; (3) 22

N of comparison group: (Y5–6 only) 11, too small to analyse

Length of intervention in weeks: 70 (but because of school holidays, 16 months used in calculating RG)

Tests used: BAS II Word Reading Test and Spelling Test

Pre- and post-test average r.a's and s.a's in years and months (only some s.d's stated), gains in reading accuracy and spelling in months of r.a./s.a., and ratio gains:

Year & skill	pre		post		gain	RG
	ave.	(s.d.)	ave.	(s.d.)		
(1) Y3–4, reading	6:3		8:4		25	1.6
(2) Y4–5, reading	6:10		8:9		23	1.4
(3) Y5–6, reading	8:0	(0:8)	10:5	(1:5)	29	1.8
spelling	8:3		10:3		24	1.5

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The average pre-test scores were in the functionally illiterate range for the first 2 groups, and in the semi-literate range for the 3rd group. However, given that the average c.a's at the beginning of Y3–5 are 7:6, 8:6 and 9:6 respectively these children were well behind. All groups made modest progress during the very long study. The post-test scores were in the semi-literate range and approaching functional literacy for the first 2 groups, and well above the threshold for functional literacy for the 3rd group. However, given that the average c.a's at the end of Y4–6 are 9:4, 10:4 and 11:4 respectively these children still had some ground to catch up. In particular, the 3rd group was about to enter secondary school and might still find some of the curriculum difficult.

Follow-up: (no follow-up)

39 THRASS

(1) Bridgend

Main reference: Matthews (1998**)**

Research design: One-group pre-test/post-test study

Date: 1998

Age range: Y3–6

Type of children: Low attainment

N of experimental group: 160 in 8 schools (for year-groups, see below)

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 13

Tests: (Reading) Neale; (Spelling) Schonell

Pre- and post-test average r.a's and s.a's and s.d's: not stated

Gains (in months of r.a./s.a.) and ratio gains:

	Reading accuracy			**Reading comprehension**		**Spelling**	
	N	Gain	RG	Gain	RG	Gain	RG
Y3	30	6.6	2.2	7.0	2.3	7.5	2.5
Y4	45	7.3	2.4	8.2	2.7	2.7	0.9
Y5	39	10.3	3.4	11.3	3.8	2.7	0.9
Y6	46	7.1	2.4	12.5	4.2	3.0	1.0

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The absence of pre- and post-test scores does not permit characterisation of starting and ending levels. All groups made useful to substantial gains in reading (both aspects), as did Y3 in spelling; the other year groups made barely standard progress in spelling.

Follow-up: (no follow-up)

39 THRASS

(2) Hampshire

Main reference: Unpublished data supplied by Roger Norgate via Alan Davies

Research design: One-group pre-test/post-test study

Date: 2005

Age range: Y2–5

Type of children: Low attainment

N of experimental group: 84 in 5 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 26 on average (6 months used in calculating RG)

Reading test: Salford, 3rd edn.

Pre- and post-test average r.a's and s.d's in years and months, gain in reading comprehension and s.d. (in months of r.a.), and ratio gain:

pre		post		gain		RG
ave.	(s.d.)	ave.	(s.d.)	ave.	(s.d.)	
5:11	(1:5)	7:1	(1:7)	14	(10)	2.3

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The average pre-test score was in the functionally illiterate range, and at about the level of the average child half-way through Y1 – but most of these children were older. By post-test they were just into the semi-literate range, having made useful progress.

Follow-up: (no follow-up)

40 Time for Reading

Main reference: Elliott et al. (2000)

Research design: RCT (no sign that clustering of children in classes allowed for in statistical analyses, but would probably not have affected ns findings)

Date: not stated, but about 1995

Age range: Reception (age 4–5)

Type of children: Low attainment, or at risk of it (pre- and early readers in a disadvantaged urban area)

N of experimental groups: (pre & post) 68; (3-year follow-up) 50

N of control groups: (pre & post) 72; (3-year follow-up) 49

Equivalence of groups: Random assignment of classes to conditions; pre-test data showed no significant differences

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 26 – but 3-year follow-up testing was conducted 2.5 years after end of intervention

Tests used: (pre & post) Specially constructed odd-one-out tests of initial phonemes and rhymes; (3–year follow-up) WORD (Wechsler Objective Reading Development) Scales

Pre- and post-test average raw scores and gains (s.d's not stated):

		pre	post	gain
Initial phoneme test	exps	3.69	5.40	1.71
	conts	3.83	5.80	1.97
Rhyme test	exps	4.92	6.14	1.22
	conts	5.00	6.26	1.26

Performance on reading and spelling measures at 3-year follow-up, with effect sizes calculated (by GB) as differences in scores divided by control group's s.d's:

	N	Reading accuracy		effect size	Reading comprehension		effect size	Spelling		effect size
		ave.	(s.d.)		ave.	(s.d.)		ave.	(s.d.)	
exps	50	89.8	(15.6)	-0.05	88.5	(14.7)	-0.08	91.7	(14.3)	-0.15
conts	49	90.6	(16.4)		89.6	(13.8)		93.5	(11.7)	

Ratio gain: n/a

Statistical significances: All differences between experimental and control groups ns

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Starting and ending levels and progress: Raw scores do not permit characterisation of pre- and post-test levels. At the 3-year follow-up at age 7–8 both groups were just below age-related expectations; their levels were equal, thus showing no benefit of the programme – but the gap between the intervention and this assessment was very long.

Follow-up: see above

41 Toe by Toe®

Main reference: Unpublished data supplied by Keith Taylor

Research design: One-group pre-test/post-test study

Date: not stated

Age range: not stated, but primary

Type of children: not stated, but apparently children with literacy difficulties

N of experimental group: 21, all at one primary school

N of comparison group: (no comparison group)

N of alternative treatment group: (no alternative treatment group)

Length of intervention in weeks: 74 (average; range 42–182. 18 months used in calculating RG)

Reading test: not stated

Pre- and post-test average r.a's in years and months (s.d's not stated), gain (presumably in reading accuracy) in months of r.a., and ratio gain:

pre	post	gain	RG
7:6	11:5	47	2.7

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Given the absence of precise information on the ages of these children, the pre-test average score cannot be characterised. However, even if all were in upper primary years by the post-test, the average score then would be at or quite likely above c.a., and would equip them adequately for the secondary curriculum. The RG shows useful progress.

Follow-up: (no follow-up)

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B. Schemes for reading and spelling at secondary level

In addition to those listed in this section, there are data for secondary-age pupils mixed in with those for primary pupils in the following schemes listed in the previous section: AcceleRead AcceleWrite, Paired Reading, Phonological Awareness Training, Reading Intervention.

42 Academy of Reading®

Main reference: Loh and Stanton (2004)

Research design: One-group pre-test/post-test study

Date: 2003–04

Age range: Northern Irish Y8–9 (England and Wales Y7–8)

Type of children: Low attainment

N of experimental group: 71 in 8 schools in 5 Education and Library Board areas in Northern Ireland (for year–groups, see below)

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 20 (5 months between pre- and post-test used in calculating RG)

Reading test: NFER-Nelson Progress in English

Pre- and post-test average standardised scores, gains in reading comprehension in standardised score points (s.d's not stated), statistical significances, and effect sizes calculated using the s.d. of the standardisation sample (15.0):

NI year	E&W year	N	pre	post	gain	p	effect size
8	7	61	82.8	89.4	6.6	<0.01	0.44
9	8	10	83.2	89.2	6.0	<0.05	0.40

Ratio gains: n/a

Starting and ending levels and progress: The average pre-test scores were below age-related expectation, and the post-test averages only just below it. The effect sizes were modest, but this amount of progress would enable these children to cope better with the secondary curriculum.

Follow-up: (no follow-up)

43 Better Reading Partnerships in Derbyshire

Main reference: Taylor (2000)

Research design: One-group pre-test/post-test study

Date: 1998–99 (though data collected in other years too)

Age range: Y7–8

Type of children: Low attainment

N of experimental group: 189 (for year–groups, see below)

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 11 (2.5 months used in calculating RG)

Reading test: Salford (mainly)

Pre- and post-test average scores and gains: not stated

Gains in reading comprehension (in months of r.a.) and ratio gains:

	N	gain	RG
Y7	132	10.2	4.1
Y8	57	12.4	5.0

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The absence of pre- and post-test scores does not permit characterisation of starting and ending levels. However, the RGs show substantial progress.

Follow-up: (no follow-up)

44 Catch Up Literacy

Barnsley, Hampshire and Powys, KS3

Main reference: Unpublished data supplied by Julie Lawes

Research design: One-group pre-test/post-test study

Date: 2005–06

Age range: Y7–8

Type of children: Low attainment

N of experimental group: 107 in 12 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 39 (10 months used in calculating RG)

Reading test: NFER C/D (NFER X/Y comprehension test also given, but most pupils failed to score)

Pre- and post-test average r.a's and s.d's in years and months, gain in reading accuracy and s.d. of gain in months of r.a., and ratio gain:

pre		post		gain		RG
8:2	(1:6)	9:4	(1:11)	14	(21)	1.4

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The pre-test score was in the semi-literate range; following modest progress the post-test score was above the threshold for functional literacy. However, even that would mean these children would be likely to struggle with the secondary curriculum, and they would need further structured support.

Follow-up: (no follow-up)

45 Corrective Reading

Main reference: Unpublished data supplied by Caroline Jennings

Research design: One-group pre-test/post-test study

Date: 2006–07

Age range: Y7

Type of children: Low attainment; all but 31 on various stages of the Code, including 2 statemented

N of experimental group: 92 in one school in Kent

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 17 (4 months between pre- and post-test used in calculating RG)

Reading test: NFER

Pre- and post-test average r.a's and s.d's in years and months, gain in reading accuracy and s.d. (in months of r.a.) and ratio gain:

pre		post		gain		RG
ave.	(s.d.)	ave.	(s.d.)	ave.	(s.d.)	
8:6	(1:6)	9:6	(1:9)	12	(13)	3.0

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The pre-test score was in the semi-literate range, and about 3 years below c.a. Catching up by a year of r.a. in 4 months is substantial progress, as shown by the RG, but these children would still struggle with the secondary curriculum, and would need further structured support.

Follow-up: (no follow-up)

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46 ENABLE PLUS (KS3)

Main reference: For a description of the programme, Bowen and Yeomans (2002); unpublished data analysed below supplied by Phil Bowen

Research design: One-group pre-test/post-test study

Date: 2006

Age range: Y7–9

Type of children: SEN, including 10 pupils with Statements; 6 deemed Statemented (School Action Plus with Local Authority funding); 5 School Action Plus; 15 at School Action

N of experimental group: 36 in 3 schools

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 10–14 (3 months used in calculating RG)

Reading test: Salford Sentence Reading Test (Revised), 2000

Pre- and post-test average r.a's in years and months (s.d's not stated), gain in reading comprehension in months of r.a., and ratio gain:

pre	post	gain	RG
7:1	8:0	11	3.7

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Given that these pupils were on average 5 years or more behind in reading age and barely semi-literate at the start, and evidently had acute special educational needs, this was a substantial gain for them; but they were still on average 4 years or more behind in reading age at the end, and the level reached would still be inadequate for them to cope fully with the secondary curriculum.

Follow-up: (no follow-up)

47 Integrated Learning Systems, National Council for Educational Technology study

(1) Mainstream, Phase II

Research design: Unmatched groups two-group pre-test/post-test study

Main reference: National Council for Educational Technology (1996)

Date: 1994–96

Age range: Y7–9? ('Key Stage 3')

Type of children: Mixed-ability

N of experimental group: 680 in 7 secondary schools in main study (NCET, 1996, p. 12); this certainly includes children involved in numeracy but not literacy – but not clear if it includes comparison group – only 375 experimentals traceable in details of report

N of comparison group: not stated

Equivalence of groups: not stated, except that comparison groups 'were provided by the participating schools'

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: not stated

Reading test: Progress was measured by tests within the programs. These provided '... assessment in terms of "AVG" levels. These represent US grade equivalents and, although preliminary work to reference them to UK measures seems to indicate that they are reasonably accurate, they have been treated with caution by our evaluators' (NCET, 1996, p. 21).

Pre- and post-test average scores and s.d's: not stated

Gains in reading comprehension: 'No consistent learning gains' (NCET, 1996, p. 19), but in School M (KS3), experimentals made average gain of 7 months of r.a. – comparison group's gain was 1 month

Ratio gains: were not stated and could not be calculated

Effect sizes calculated using pooled pre-test s.d's of experimental and comparison groups (for formula used, see NCET, 1996, pp. 6 & 10, footnotes), as stated in report (p. 19):

School M, 0.60 in favour of experimentals;
report also implies that overall effect size was close to zero and ns, because there were no consistent learning gains

Statistical significances: ns except for School M

Starting and ending levels and progress: The absence of pre- and post-test scores does not permit characterisation of starting and ending levels. However, it is clear that the experimental groups made almost no progress and that the technology made virtually no difference to their progress relative to the comparison groups.

Follow-up: (no follow-up)

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47 Integrated Learning Systems, National Council for Educational Technology study

(2) Mainstream, Phase III

Main reference: BECTa (1998)

Research designs: (NFER and Durham studies) Two unmatched groups two-group pre-test/ post-test studies; (Leicester study) Matched groups two-group pre-test/post-test quasi-experiment

Date: 1996–97

Age range: (NFER study) Y8; (Durham and Leicester studies) Y9 and Y11

Type of children: Mixed-ability

N of experimental groups: (Y8) 1,509 in 25 schools; (Y9, Durham study) 416 in 8 schools; (Y11, Durham study) 214 in 6 schools

N of comparison groups: (Y8) 191 in 23 schools; (Y9, Durham study) 599 in same 8 schools as experimental group, and 1,372 in other schools; (Y11, Durham study) 415 in same 6 schools as experimental group, and over 37,000 in other schools

N for the Leicester study was not stated, but was 'relatively small' (BECTa, 1998, p. 19), and the experimental and comparison groups were drawn from the same 6 schools

Equivalence of groups: (NFER and Durham studies) not matched – pre-test differences handled statistically; (Leicester study) said to be matched but no details given

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 52

Reading test: not stated, but presumably the comprehension measures within the program as in Phase II

Pre- and post-test average standardised scores, gain, and s.d's: not stated

Ratio gain: n/a

Effect sizes as stated by authors: (Y8) +0.08; (Y9, Durham study) not stated, but 'The use of ILS was associated with marginally lower outcomes. ILS pupils achieved lower than the predicted levels of Key Stage 3 attainment in comparison to non-ILS pupils from both within and outside their school'; (Y11, Durham study) not separately stated, but 'As with Year 9, the overall finding was of marginally lower than predicted examination outcome scores for the pupils exposed to ILS… [E]ffect sizes ranged from -0.03 to -1.29' (BECTa, 1998, p. 9). No effect sizes given for Leicester study, but would all effectively be zero, as implied by statement in next paragraph but one

Statistical significances: (Y8) statistically significant in favour of experimental group even though difference was very small (BECTa, 1998, p. 9); (Y9 and Y11, both studies) not stated

No statistical data given for Leicester study, but they said 'We have been unable to differentiate between the performance levels of pupils who have been exposed to ILS and those who have not' (BECTa, 1998, p. 19) and this applied to both Y9 and Y11.

Starting and ending levels and progress: The absence of pre- and post-test scores does not permit characterisation of starting and ending levels. However, it is clear that the experimental groups made almost no progress and that the technology made virtually no difference to their progress relative to the comparison groups.

Follow-up: (no follow-up)

47 Integrated Learning Systems, National Council for Educational Technology study

(3) For pupils with low attainments in reading

No data reported here – see section 3.17

48 Literacy Acceleration

(1) The author's PhD study, 1st cohort

The two cohorts' data are analysed separately here because the 1st cohort received 60 weeks' instruction, the 2nd 30 weeks

Main references: Lingard (1993, 1994)

Research design: Unmatched groups two-group pre-test/post-test study

Date: not stated (late 80s/early 90s?)

Age range: Y7–8

Type of children: Low attainment (pre-test average r.a. and s.a. were 2.5 and 4.75 years below average chronological age of 11:7)

N of experimental groups: 14 in one school (7 others in the same school who were in the comparison group in the first year of the study joined the experimental group in the second year; their data are not analysed here)

N of comparison groups: 25 in 2 other schools

Equivalence of groups: Not matched; seem to be those who were available. Comparison group also had low attainment, but were not as far behind (pre-test average r.a. and s.a. were 1½ and 3 years below average chronological age)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 60, = 2 school years (pupils were tested at the beginning of Y7, at the end of Y7, and at the end of Y8. The two years are analysed separately here (as by the author); intervals used in calculating RG were therefore 9 months for 1st year and 12 months for 2nd year)

Tests used: Suffolk Reading Scale, Vernon Graded Word Spelling Test

Pre-, mid- and post-test average r.a's/s.a's in years and decimal years and standardised scores for reading (s.d's not stated), gains in reading comprehension and spelling over previous test in months/standardised score points, ratio gains, and effect sizes calculated (by GB) using the s.d. of the standardisation sample (15.0):

Experimental group	**pre-test**	**mid-test**	**gain**	**RG**	**effect size**	**post-test**	**gain**	**RG**	**effect size**
reading									
– r.a.	9.1	10.9	22	2.4		11.9	12	1.0	
– standardised score	81.4	94.1	6.7		0.45	100.0	5.9		0.39
spelling									
– s.a.	7.4	8.9	1.5	2.0		9.9	1.0	1.0	

Comparison group	**pre-test**	**mid-test**	**gain**	**RG**	**effect size**	**post-test**	**gain**	**RG**	**effect size**
reading									
– r.a.	10.2	10.5	4	0.4		11.2	8	0.7	
– standardised score	93.1	93.1	0		0	94.3	1.2		0.08
spelling									
– s.a.	8.6	8.9	4	0.4		9.4	0.5	0.04	

Statistical significances of between-group comparisons: $p<0.05$ for experimental group's greater progress in reading and spelling between pre- and mid-tests; ns between mid- and post-tests

Starting and ending levels and progress: Pre-test standardised scores suggest the experimental group was below age-related expectation for reading, and the comparison group just below it; r.a's for both groups were above the threshold for functional literacy but would need boosting if these children were to cope fully with the secondary curriculum, and s.a's were in the semi-literate range. The experimental group's impact measures show modest or useful gains in reading and spelling in the first year. Although the increase in average standardised score and the effect size for reading in the second year suggest further useful progress, the RGs for both reading and spelling show just standard progress. Meanwhile, the comparison group had fallen much further behind in both years (r.a's/s.a's) or made virtually no relative progress (standardised scores for reading).

Follow-up: (no follow-up)

(2) The author's PhD study, 2nd cohort

Main references: Lingard (1993, 1994)

Research design: Unmatched groups two-group pre-test/post-test study

Date: not stated (late 1980s/early 1990s?)

Age range: Y7

Type of children: Low attainment (pre-test average r.a. and s.a. were 3 and 4½ years below average chronological age)

N of experimental group: 23 in 1 school

N of comparison group: 15 in 2 schools, one of which was the experimental group's school

Equivalence of groups: Not matched; seem to be those who were available. Comparison group also had low attainment, but were not as far behind (pre-test average r.a. and s.a. were 1.5 and 3.3 years below average chronolgical age

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 30, = 1 school year (pupils were tested at the beginning, in the middle and at the end of Y7. However, because 8 pupils were lost from the experimental group after the mid-test, data for the post-test are not analysed here. The interval used in calculating RG = 4.5 months)

Tests used: Suffolk Reading Scale, Vernon Graded Word Spelling Test

Pre- and mid-test average r.a's/s.a's in years and decimal years and standardised scores for reading (s.d's not stated), gains in reading comprehension and spelling in months/ standardised score points, ratio gains, and effect sizes calculated (by GB) using the s.d. of the standardisation sample (15.0):

Experimental group	pre-test	mid-test	gain	RG	effect size
reading					
– r.a.	8.8	10.2	17	3.7	
– standardised score	81.0	90.3	9.3		0.62
spelling					
– s.a.	7.2	7.8	7	1.6	

Comparison group	pre-test	mid-test	gain	RG	effect size
reading					
– r.a.	10.0	10.6	8	1.7	
– standardised score	90.5	96.0	5.5		0.37
spelling					
– s.a.	8.3	8.9	7	1.6	

Statistical significances of between-group comparisons: $p<0.05$ for experimental group's greater progress in reading; ns for spelling

Starting and ending levels and progress: The only pre-test score that was in the functionally literate range was the comparison group's r.a.; all others were in the semi-literate range or below age-related expectation. Both the RG and the effect size show the experimental group's progress in reading was substantial; all other gains were modest. By mid-test, the comparison group's scores suggest they could tackle the secondary curriculum in reading, but still struggle with spelling; the experimental group would need substantial further support to reach even those levels, despite their remarkable (RG)/useful (effect size) gain in reading.

Follow-up: (no follow-up)

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48 Literacy Acceleration

(3) The Cornwall study

Main reference: Lingard (1997)

Research design: One-group pre-test/post-test study

Date: 1993–4

Age range: Y7

Type of children: Low attainment (pre-test average r.a. and s.a. were 2.5 years and 3.3 years below average chronological age)

N of experimental group: 26 in 1 school

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 30 (pre-test in Sept, post-test in June, so 9 months used in calculating RG)

Tests used: Suffolk Reading Scale, Vernon Graded Word Spelling Test

Pre- and post-test average r.a's/s.a's in years and months and standardised scores (s.d's not stated), gains in reading comprehension and spelling in months/standardised score points, ratio gains, effect sizes calculated (by GB) using the s.d's of the standardisation samples (15.0), and statistical significances of gains:

	pre-test	post-test	gain	RG	effect size	p
reading						
– r.a.	9:1	11:10	33	3.7		
– standardised score spelling	82.8	99.9	17.1		1.14	<0.05
– s.a.	8:3	9:5	14	1.6		
– standardised score	78.4	81.9	3.5		0.23	<0.05

Starting and ending levels and progress: The impact measures show substantial/remarkable gains in reading – in particular, the average standardised score had risen from more than one s.d. below average to the national average – and modest gains in spelling, where pre-test scores were in the semi-literate range/ below age-related expectation and the post-test scores would still leave these pupils struggling.

Follow-up: At the end of the year, 11 of the 26 pupils left the programme, and the lowest-scoring 15 remained for another year, and were re-tested using the same instruments in June 1995. By this point this group's average standardised score for reading had also risen to the national average, though they remained well below this in spelling. No follow-up data were given for the other 11 pupils.

49 Philosophy for Children

Main reference: Williams (1993)

Research design: Matched groups two-group quasi-experiment

Date: 1992–93

Age range: Y7

Type of children: Low attainment

N of experimental group: 15

N of comparison group: 17 (received one English lesson a week instead of the programme)

Equivalence of groups: Matched on gender and pre-test scores

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 34 (27 one-hour teaching sessions)

Reading test: London Reading Test

Pre- and post-test average standardised scores, gains in reading comprehension, s.d's, and effect size calculated (by Mark Pilling) using pooled post-test s.d.:

	pre		post		gain		effect size
exps	91.5	(12.9)	94.5	(13.3)	3.0	(5.2)	0.23
comps	89.3	(10.6)	89.4	(11.9)	0.1	(8.7)	

Ratio gain: n/a

Statistical significances: Experimentals' gain was statistically significant ($p<0.05$), the comparison group's was not. However, the difference in gains was also ns ($p=0.27$), probably because of the very small samples

Starting and ending levels and progress: Both groups' pre-test scores were below age-related expectation, as was the comparison group's post-test score. Meanwhile, the experimental group had made modest progress and come much closer to the national norm.

Follow-up: (no follow-up)

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50 Read Write Inc. Fresh Start

(1) The DfES evaluation

Main reference: Brooks et al. (2003)

Research design: One-group pre-test/post-test study

Date: 2002–03

Age range: Mainly Y7, with some Y8–9

Type of children: Pupils with r.a. more than 3 years below chronological age

N of experimental group: (reading) 156 in 6 schools; (spelling) 96 in 5 schools, of which 3 also provided reading data and 2 were different

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 24 on average (5.5 months used in calculating RG)

Tests used: Suffolk Reading Scale level 3; Young's Parallel Spelling Test

Pre- and post-test average r.a's/s.a's in years and decimal years and standardised scores (s.d's not stated), gains in reading comprehension and spelling in months/standardised score points, RGs, and effect sizes calculated (by GB) using s.d's of standardisation samples (15.0):

		N	pre	post	gain	RG	effect size
Test reading							
	r.a.	156	8.7	9.5	9	1.6	
	ss	156	78.7	83.8	5.1		0.34
spelling							
	s.a.	96	8.3	8.7	5	0.9	
	ss	53	82.3	82.3	0		0

ss = standardised scores. These were missing for spelling for pupils from 2 schools

Statistical significances: were not stated and could not be calculated, but the spelling result would clearly be ns

Starting and ending levels and progress: The pre-test scores were in the semi-literate range/ below age-related expectation on both skills; even the Y7 pupils in the sample would have been about 3 years below c.a., and the Y8–9 pupils correspondingly further below. They made modest progress in reading and barely any in spelling, and would need substantial further support to cope with the secondary curriculum.

Follow-up: (no follow-up)

50 Read Write Inc. Fresh Start

(2) Leicester

Main reference: Lanes et al. (2005)

Research design: One-group pre-test/post-test study

Date: 2003–05

Age range: Y7

Type of children: Pupils with r.a's below 9:0 on entry to the school

N of experimental group: 63 in 2 consecutive cohorts in one secondary school

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 34 (9 months used in calculating RG)

Tests used: New Macmillan Individual Reading Analysis, Vernon Spelling Test

Pre- and post-test average r.a's/s.a's and s.d's in years and months, gains in reading comprehension and spelling and s.d's in months of r.a./s.a., and ratio gains:

	pre		post		gain		RG
reading	7:10	(0:11)	9:7	(1:3)	21	(10)	2.3
spelling	8:2	(1:5)	8:9	(1:4)	7	(12)	0.8

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: Pre-test scores were in the semi-literate range, post-test scores above the threshold for functional literacy in reading and approaching it in spelling. The pupils made useful progress in reading, but slightly below standard progress in spelling. They would need further structured support.

Follow-up: (no follow-up)

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50 Read Write Inc. Fresh Start

(3) Cornwall

Main reference: Unpublished data supplied by Rosemary Austin

Research design: One-group pre-test/post-test study

Date: 2006–07

Age range: Y7

Type of children: Low attainment on entry to school

N of experimental group: 29 in one secondary school

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 6 (1.5 months used in calculating RG)

Tests used: NFER 9–14 Group Reading Test 2

Pre- and post-test average r.a's in years and months, standardised scores and s.d's, gains in reading comprehension and s.d's in months of r.a./standardised score points, RG, and effect size calculated (by GB) using s.d. of standardisation sample (15.0):

	N	pre		post		gain		RG	effect size
comprehension age	27	8:3	(1:5)	9:3	(1:4)	12	(16)	8.0	
ss	29	80.9	(8.5)	84.7	(8.0)	3.8	(7.3)		0.25

Statistical significances: Stating the statistical significance of the r.a. gain would not be meaningful because some progress was due simply to maturation. However, the standardised score gain was highly significant ($p<0.01$).

Starting and ending levels and progress: Pre-test scores were in the semi-literate range/ below age-related expectation. Having made remarkable (RG) or modest (effect size) progress, at post-test these pupils were still on average one standard deviation below the national norm and would need further support.

Follow-up: (no follow-up)

51 Sound Training for Reading ©

Main reference: Unpublished data supplied by Katy Parkinson

Research design: Two-group pre-test/post-test study

Date: 2004–05

Age range: Y9

Type of pupils: Mixed-ability mainstream pupils, none statemented but with reading ages up to 4 years below chronological age

N of experimental group: 70 in one school

N of comparison group: 21 in same school

Equivalence of groups: School splits Y9 into two equitable halves (on gender, ability, behaviour, ethnicity). Experimental pupils were selected from one half and comparison pupils from the other. Pre-intervention scores for the groups were matched – it is not clear to what extent this or other factors explain the discrepancy in group sizes.

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 6 (but 9 months between pre- and post-test used in calculating RG)

Reading test: NFER graded word reading test

Pre- and post-test average r.a's and s.d's in years and decimal years, gains in reading accuracy and s.d's in months of r.a., ratio gains, effect size calculated (by Mark Pilling) using the pooled post-test s.d., and statistical significances of gains (and between rows) of difference in gains:

	N	pre		post		gain		RG	effect size	p
exps	70	10.8	(1.0)	11.9	(1.2)	13	(12)	1.4	0.65	<0.001
										<0.001
comps	21	11.1	(1.2)	11.4	(1.4)	3	(8)	0.3		ns

Starting and ending levels and progress: The average c.a. of pupils entering Y9 is 13.5, so even with their functionally literate scores these groups were well behind and struggling with the secondary curriculum. The experimental group made a modest (RG) or useful (effect size) gain; the more powerful effect size and highly significant difference are due to the comparison group having fallen much further behind.

Follow-up: (no follow-up)

52 The Accelerated Reader

Main reference: Vollands et al. (1999)

Research design: Two one-group pre-test/post-test studies

Date: not stated, but before 1996

Age range: Scottish P(rimary)7 (=Y7)

Type of children: Low attainment ('at risk'), including some with reading delay and/or SEN

N of experimental groups: (1) 25 in 1 school in Aberdeen

(2) 22 in a different school in Aberdeen

N of comparison group in 1st study: (12 in a parallel class in same school, too small to analyse)

N of alternative intervention group in 2nd study: (12 in a younger class in same school, too small to analyse)

Length of intervention in weeks: 26

Reading tests: Edinburgh

Pre- and post-test average standardised scores and s.d's, gains in reading comprehen-sion (s.d's not stated), and effect sizes calculated (by GB) using s.d. of standardisation sample (15.0):

	pre		post		gain	effect size
1st study	90.0	(11.4)	98.2	(11.5)	8.2	0.55
2nd study	89.5	(19.1)	92.6	(15.8)	3.1	0.21

Ratio gain: n/a

Statistical significances: Both gains stated by authors to be statistically significant

Starting and ending levels and progress: Both pre-test scores were just below age-related expectation, as was the post-test score in the 2nd study. The effect size shows that the pupils in the first study made a useful gain, and their post-test score was close to the national norm. However, the pupils in the second study made a very small gain.

Follow-up: (no follow-up)

53 The Secondary Reading Research

Main reference: Unpublished data supplied by Jonathan Solity

Research design: Matched groups two-group pre-test/post-test quasi-experiment

Date: 2003–04

Age range: Y7

Type of children: Low attainment (low scores on Suffolk A reading test)

N of experimental group: 62 in 3 schools

N of comparison group: 62 in 3 different schools

Equivalence of groups: Both groups were selected on same basis

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 36 (9 months used in calculating RG)

Tests used: (reading) BASWRT, NFER-Nelson new Reading Analysis (Form A) – both accuracy and comprehension, Suffolk Form A; (spelling) Word Spelling Test

Pre- and post-test average r.a's/s.a's and s.d's in years and months, gains and differences in months of r.a./s.a., ratio gains, and effect sizes calculated (by GB) as differences in gains divided by comparison group's post-test s.d's:

Pre		BAS acc	NFER acc	NFER comp	Suffolk comp	WORD s.a.
SRR	Ave.	8:7	7:11	7:9	8:3	8:6
	(s.d.)	(1:7)	(1:0)	(1:4)	(1:0)	(1:8)
Comparison	Ave.	8:9	8:1	8:1	8:6	8:5
Group	(s.d.)	(1:4)	(1:0)	(1:2)	(1:2)	(1:3)

Post		BAS acc	NFER acc	NFER comp	Suffolk comp	WORD s.a.
SRR	Ave.	9:3	8:9	8:5	9:1	9:0
	(s.d.)	(1:8)	(1:2)	(1:3)	(1:2)	(1:9)
Comparison	Ave.	9:1	8:7	8:10	9:3	8:11
Group	(s.d.)	(1:6)	(1:2)	(1:3)	(1:3)	(1:4)

Gains	BAS acc	NFER acc	NFER comp	Suffolk comp	WORD s.a.
SRR	7.6m	10.1m	7.8m	12.4m	5.3m
RG	0.8	1.1	0.9	1.4	0.6
Comps	5.3m	6.4m	7.8m	9.1m	4.4m
RG	0.6	0.7	0.9	1.0	0.5
Difference	2.3m	3.7m	0m	3.3m	0.9m
Effect size	0.13	0.26	0	0.22	0.06

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Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: All pre-test and, with a few exceptions just above the threshold of functional literacy, post-test scores were in the semi-literate range. Both groups were barely holding their own, or were actually slipping further behind, except in Suffolk comprehension, where the SRR group made a modest gain. Overall, the SRR group was losing less ground than the comparison group.

Follow-up: (no follow-up)

54 THRASS

Main reference: Matthews (1998)

Research design: One-group pre-test/post-test study

Date: 1998

Age range: Y7–8

Type of children: Low attainment

N of experimental group: 76 in 4 schools in Bridgend

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 13

Tests used: (Reading) Neale; (Spelling) Schonell

Pre- and post-test average r.a's and s.a's and s.d's: not stated

Gains (in months of r.a./s.a.) and ratio gains:

		Reading accuracy		Reading comprehension		Spelling	
	N	Gain	RG	Gain	RG	Gain	RG
Y7	57	12.0	4.0	17.0	5.7	5.4	1.8
Y8	19	15.8	5.3	16.3	5.4	6.1	2.0

Effect sizes: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The absence of pre- and post-tests scores means that starting and ending levels cannot be characterised. Both year-groups made remarkable progress in both aspects of reading, and modest progress in spelling.

Follow-up: (no follow-up)

55 Toe by Toe®

Main reference: MacKay (2006)

Research design: One-group pre-test/post-test study

Date: 2002–03

Age range: Scottish Primary 7 (=Y7)

Type of children: Low attainment

N of experimental group: 91 in 32 schools

N of comparison group: (no comparison group)

N of alternative treatment group: (no alternative treatment group)

Length of intervention in weeks: 26

Reading test: Neale, 2nd revised UK edn., Form 2

Pre- and post-test average r.a's in years and months (s.d's not stated), gain in months of r.a., and ratio gain:

	pre	post	gain	RG
reading accuracy	8:0	9:2	14	2.3

Effect size: n/a

Statistical significances: were not stated and could not be calculated

Starting and ending levels and progress: The pre-test score was in the semi-literate range. Even the useful progress made brought the post-test score only just over the threshold of functional literacy, and these pupils would require very substantial further support.

Follow-up: (no follow-up)

C. Schemes for writing

56 Family Literacy

Main references: Brooks et al. (1996, 1997), Gorman and Brooks (1996)

Research design: One-group pre-test/post-test study

Date: Summer 1994–Summer 1995 (1 cohort of children in each term)

Age range: Pre-school to Y2 (ages 3–6)

Type of children: Low attainment, or at risk of it

N of experimental group: 362 at outset, on about 20 sites. Smaller numbers at post-test and at each of three follow-ups (see below) because calculations based only on children with complete data ('returners')

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12

Writing assessment: On 7-point scale derived empirically from analysis of several hundred scripts (see Gorman and Brooks, 1996), later extended to 12-point scale (see Brooks et al., 1997)

Sample sizes, average raw scores and s.d's at pre- and post-test and 12-week, 9-month and long-term follow-ups, and gains from pre-test:

	N	average score	(s.d.)	gain
pre-test vs	279	3.5	(1.6)	
post-test		4.1	(1.7)	0.6
pre-test vs	179	3.7	(1.6)	
12–week follow-up		4.6	(1.4)	0.9
pre-test vs	91	4.0	(1.5)	
9–month follow-up		5.4	(1.3)	1.4
pre-test vs	175	3.4	(1.6)	
long-term follow-up		8.0	(1.7)	4.6

Ratio gain: n/a

Effect size: n/a

Statistical significances: $p<0.05$ for all differences from pre-test

Starting and ending levels and progress: Raw scores do not permit the starting and ending levels to be characterised. However, the evaluators judged the progress to be above what would have been expected.

Follow-up: see above

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57 Further Literacy Support

Main references: Beard et al. (2004, 2005, 2007)

Research design: Unmatched groups pre-test/post-test study

Date: 2003

Age range: Y5

Type of children: Low attainment (level 2a–3 of National Curriculum), approximately bottom 20% of the average class, but not the very lowest attainers (below level 2a)

N of experimental group: 1359 in 161 schools (pre) in 25 LAs,
1054 in 150 of same schools (post)

N of comparison groups: For standardised test, 120 in 5 schools in 1 LA not among those above (pre & post) otherwise, 4215 in same 161 schools as above (pre), 2600 in same 150 schools as above (post)

Equivalence of groups: For standardised test, the 5 schools 'were from a wide range of socio-economic catchments and were identified through local professional networks. The Ofsted website… was consulted to ensure that their pupil attainment reflected an appropriate range when the schools were last inspected.' (Beard et al., 2007)

For other measures, it seems to have been assumed that both experimental group and larger comparison group would be nationally representative

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 12; also 12 weeks between pre- and post-standardised tests (January–March), but about 25 weeks (January–July) between pre- and post-Teacher Assessments

Writing assessments: (standardised test) *Literacy Impact* (Twist and Brill, 2000)
(otherwise) Teacher Assessment scores

Pre- and post-test average scaled writing scores and s.d's (apparently pooled between pre and post within groups), gains (s.d's not stated), effect size calculated (by GB) as difference in gains divided by comparison group's s.d., and statistical significances of gains and difference as reported by authors:

	FLS	Comparison
N	1049	118
Pre	33.69	37.97
Post	34.62	38.08
(s.d.)	(7.80)	(7.73)
Gains	0.93**	0.11
Difference in gains	0.82	
Effect size	0.16	

** = $p<0.01$

Pre- and post-test average Teacher Assessment levels for writing and s.d's (apparently pooled between pre and post within groups), gains (s.d's not stated), and effect size calculated (by GB) as difference in gains divided by comparison group's s.d. (statistical significances not stated and could not be calculated):

	FLS	Comparison
N	1054	2600
Pre	4.15	5.15
Post	5.81	6.81
(s.d.)	(1.47)	(1.61)
Gains	1.66	1.66
Difference in gains	0	
Effect size	0	

Ratio gains: n/a

Starting and ending levels and progress: Neither the scaled scores nor the TA levels permit the starting and ending levels to be characterised. The scaled scores show the experimental group made some progress, and the comparison group hardly any. The Teacher Assessments show no difference in gains between groups.

Follow-up: In school year 2003–04 these pupils were followed up in three ways: they were re-tested using the standardised test in April/May 2004; their teachers again provided Teacher Assessments, also in April/May 2004; and their National Curriculum KS2 (age 11) test results were gathered in July 2004.

The average standardised test results, and gains since March 2003, were as follows:

	Writing		
Group	N	average	gain
FLS	570	40.61	6.21
Comparison	112	43.49	5.26

The comparison group's average score was significantly higher than the FLS group's; the slight difference in gain was not statistically significant. However, this does mean that the FLS group had maintained their gain from the previous year even though they were still just as far behind.

In the teacher assessments and KS2 national test results the percentages at each level were as follows for those of the FLS group who could be traced:

National Curriculum level	TA writing (N=515)	KS2 writing (N=515)	KS2 English overall (N=575)
5 and above	4.4%	5.8%	8.7%
4	68.1%	48.6%	75.3%
3	25.5%	44.7%	15.5%
2 and below	1.0%	0.9%	0.5%

There are no comparison data and no way of calculating an impact measure. However, before the programme none of these children would have been predicted to achieve level 4 in writing, yet 54% achieved level 4 or even level 5.

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58 Paired Writing

(1) The Primary 4 study

Main references: Sutherland and Topping (1999); also summarised in Topping (2001), and Topping et al. (2000); approach also described in Topping (1995)

Research design: Matched groups RCT

Date: not stated (c.1997?)

Age range: Scottish Primary 4 (=Y4) ('8-year-olds')

Type of children: Mixed-ability

N of experimental groups: 16 in each of two classes in 1 school; one group had helpers ('tutors') of same ability (and swapped roles at intervals), the other had helpers of different ability (and did not swap roles)

N of control groups: 16 in each of the same two classes

Equivalence of groups: Chosen randomly (alternate children on class register allocated to different groups, then groups randomly assigned to intervention or comparison)

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 8

Writing assessment: Scottish 5–14 National Curriculum Guidelines (SQA, 1997) which have 5 levels, A (low)–E (high), converted to numerical scale 1–5 for statistical purposes in this study

Average pre-and post-test raw scores and gains for writing, and s.d's of pre-and post-test score (s.d's of gains not stated), statistical significances, and effect sizes calculated (by GB) as difference in gains divided by post-test s.d. of relevant control group:

Cross-ability				**Same-ability**		
Experimental		Control		Experimental		Control
			Pre-test			
1.75		1.31		1.63		1.75
(0.97)		(0.92)		(0.78)		(0.43)
	ns				ns	
			Post-test			
2.13		1.44		1.69		1.56
(0.99)		(0.79)		(0.92)		(0.61)
			gain			
0.38		0.13		0.06		-0.19
p = 0.036		ns		ns		ns
	ns				p = 0.049	
effect size = 0.32				effect size = 0.41		

difference between gains of 2 experimental groups significant, p = 0.038

(source: Sutherland and Topping, 1999, Table 1, p. 170, edited and incorporating details from text)

Ratio gains: n/a

Starting and ending levels and progress: Not possible to characterise the starting and ending levels. The cross-ability experimental group made what appears to be a worthwhile gain. The larger effect size for the other experimental group is due to their control group having scored lower at post-test than pre-test.

Follow-up: (no follow-up)

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(2) The Scottish Primary 6 study

Main references: Yarrow and Topping (2001); also summarised in Topping (2001), and Topping et al. (2000); approach also described in Topping (1995)

Research design: Matched groups RCT

Date: not stated (c.1997?)

Age range: Scottish Primary 6 (=Y6) ('10- and 11-year-olds')

Type of children: 'A problematic mixed-ability class'

N of experimental group: 13 (14 at pre-test but one pair lost), all in one class in one school

N of control group: 13 (14 at pre-test but one pair lost), all in same class

Equivalence of groups: Children matched in pairs on basis of gender and pre-test writing scores and allocated to groups; groups then allocated randomly to experimental or control group. Each group then divided at median score – lower half of experimentals became writers (tutees); lower half of control group became their control group; upper half of experimentals became helpers (tutors); upper half of control group became their control group. However, here all experimentals are treated as one group and all control group members as another because N would otherwise be too small.

N of alternative intervention group: (no alternative intervention group)

Length of intervention in weeks: 6 (8 weeks between pre-and post-test)

Writing assessment: As Sutherland and Topping (1999) but using 35 sub-criteria to create 35-point scale. The writing was marked by people who were unaware of which group the children belonged to.

Pre-and post-test average raw scores and gains for writing, s.d's of post-test and gain scores (s.d's of pre-test scores not stated):

	Interaction (exps)		No Interaction (conts)	
pre-test	11.10		11.16	
post-test	16.15	(4.06)	13.54	(4.89)
gain	5.08	(2.33)	2.38	(3.52)

Statistical significances: p = 0.016

Effect size calculated (by GB) using comparison group's post-test s.d: 0.55

Ratio gain: n/a

Starting and ending levels and progress: Not possible to characterise the starting and ending levels. The experimental group made what appears to be a useful gain, and the medium effect size shows it was distinctly larger than the control group's gain.

Follow-up: (no follow-up)

59 Reading Recovery

(1) Every Child a Reader in London

Main references: Burroughs-Lange (2006), Every Child a Reader (undated but known to have been published in 2006)

Research design: Matched groups two-groups pre-test/post-test quasi-experiment

Date: 2005–06

Age range: Y1

Type of children: Low attainment – bottom 5–6% of the national distribution

N of experimental group: 87 in 21 schools in 5 London boroughs (Brent, Greenwich, Hackney, Hammersmith and Fulham, Southwark)

N of comparison group: 147 in 21 schools in 5 other London boroughs (Barking and Dagenham, Haringey, Islington, Lambeth, Lewisham)

N of alternative intervention group: (no alternative intervention group)

Equivalence of groups: All 10 boroughs were volunteers, but those in the experimental group already had some RR provision while the comparison boroughs did not (but were to implement it in 2006-07); the two groups were similar in population characteristics and KS1 achievement levels. In the RR boroughs the schools which already had an RR teacher (N=21) were chosen to participate. In the comparison boroughs, the nominated schools (N=21) were those thought to be most in need of the programme. In each of the 42 schools, the lowest-attaining Y1 class was nominated to participate, and the 8 children in that class thought to be poorest in literacy were chosen for the study. The two samples of schools were very similar in terms of number on roll, number in Y1, percentage of children on free school meals, and percentage of children having English as an additional language. The samples of children were very similar in terms of average age and gender balance – unusually for this sort of study, there were almost equal numbers of boys and girls.

Length of intervention in weeks: Not stated, and it would be standard RR practice to vary this according to individual children's needs anyway; interval of 10 months (Sept–July) between pre- and post-test used in calculating RG.

Writing assessment used: Children were asked to 'Write all the words you know', given 10 minutes to do this, and scored on those they wrote correctly.

Pre- and post-test raw scores and s.d's, gains in raw score (s.d's not stated), and effect size calculated using the *pooled* post-test s.d's:

			pre-test		post-test		gain	effect size
Test	**group**	**N**	**ave.**	**(s.d.)**	**ave.**	**(s.d.)**		
Writing	exps	87	6.2	(5.2)	45.4	(19.0)	39.2	1.60
vocabulary	comps	147	6.5	(7.0)	20.6	(13.0)	14.1	

Statistical significances: Experimental group's post-test average score was statistically significantly higher than the comparison group's.

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Starting and ending levels and progress: Raw scores mean it is not possible to characterise the starting and ending levels. The experimental group's gain seems impressive, the comparison group's gain pretty poor; the difference is confirmed by the remarkably large effect size.

Follow-up: (was scheduled for July 2007)

59 Reading Recovery

(2) Reading Recovery across Britain and Ireland

Main reference: Douëtil (2006)

N.B. Only follow-up data are reported in this entry, hence the absence of several headings. For all other details, see the earlier entry for Reading Recovery.

Research design: One-group follow-up only study

Date: 2005–06

Age range: Y1–2

Type of children: Low attainment

N of experimental group: 1076 in an unknown number of schools in England

N of comparison group: (no comparison group)

N of alternative intervention group: (no alternative intervention group)

Follow-up: These children were a sub-sample of a very large group whose reading had been assessed at 4 earlier stages. When they took the KS1 national tests in summer 2006 their KS1 reading and writing scores were gathered. For the reading data, see the earlier entry.

The writing results, which include children who were still only part way through their Reading Recovery programme when they took national assessments, were as follows:

Level	N	%
3	3	0.3
2a	30	2.8
2b	208	19.3
2c	425	39.5
1	348	32.4
W	61	5.7

The percentage achieving below level 2 was 38.1%, higher than the national figure, but the national figure contains the whole attainment range, while the RR figure by definition refers only to a limited sub-sample who started off well behind, and therefore represents considerable success and progress.

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A.3 Comparisons between schemes

To provide a basis for comparing the interventions, including alternative intervention and control/comparison groups, the two forms of impact measure (RGs and effect sizes) have been put into rank orders, first for primary, then for secondary level, and within those, first for reading, then for spelling, then for writing – see Tables A.6–14 below. In Tables A.6–7 and A.11–12, where measures for both reading accuracy and reading comprehension were available, both have been listed; all the blanks under 'comprehension' mean that only accuracy data were available for those groups, and vice versa.

In Tables A.6, A.8, A.11 and A.13,

- where there was a satisfactory control/comparison group, the significance of the difference in gains has been indicated between the two RGs;
- where the comparison group was non-equivalent, the significance of the difference in gains has always been shown as uncertain – but the comparison group's RG is still valid in its own right, even though shown in brackets;
- where there was no control/comparison group, 'comparisons' and 'significance of the difference' columns are left blank.

As shown in Table A.5, in 18 of the studies analysed here different interventions were compared within one study. Most of these provided useful comparative quantitative data, with statistical tests of the differences between approaches – these are included in the descriptions above, and form part of the basis for the judgements reported in chapter two. However, it proved impossible to indicate the statistical significance of differences between experimental and alternative intervention groups clearly in Tables A.6–14, and this information is therefore provided in Table A.15. In the case of Inference Training, the differences include those between the two experimental groups.

Table A.6:
List of reading studies for primary level in decreasing order of ratio gain (RG) for whichever of accuracy and comprehension is the higher

Key:

RG of 4 or above	=	Remarkable impact
RG between 3 and 4	=	Substantial impact
RG between 2 and 3	=	Useful impact
RG between 1.4 and 2	=	Modest impact
RG of less than 1.4	=	Impact of doubtful educational significance
RG of 1.0	=	Exactly standard progress

Study	Year group	Taught by	RG, accuracy			RG, comprehension			Follow-up
			Exps		Comps	Exps		Comps	
Inference Training in Sussex, exps 1 (poor comprehenders)	Y3	other adults, group	4.3			17.4			
ARROW, orig.	Y1–6	computer & supervising adult, 1-1	16.5						
AcceleRead AcceleWrite in Devon	Y5–6	computer & supervising adult, 1-1	16.1						
Inference Training in Sussex, AI1 (compre. exercises)	Y3	teacher, group	5.0			9.6			
BRP in Durham	Y2	other adults, 1-1	7.2			9.2			Maintained up to 12 months
Inference Training in Leicester	Y5–6	teacher, group	6.5			9.0	?	(3.7)	
AcceleRead AcceleWrite in Jersey	Y3–9	computer & supervising adult, 1-1	8.3						Continued to gain up to 10 months later
Phono-Graphix™ in Bristol	Y2–6	teacher & other adult, 1-1	8.3			8.3			

Table A.6 continued

Study	Year group	Taught by	RG, accuracy			RG, comprehension			Follow-up
			Exps		Comps	Exps		Comps	
Inference Training in Sussex, AI2 (rapid decoding)	Y3	other adults, group	3.0			8.2			
ARROW in Wilts	Y3–6	computer & supervising adult, 1-1				7.7			
BRP in Durham	Y1	other adults, 1-1	7.2			4.4			Continued to gain up to 1 year
Inference Training in Sussex, exps 2 (good comprehenders)	Y3	other adults, group	3.9			5.9			
Phono-Graphix™ in Bristol	Y4–6	teacher & other adult, 1-1	5.8			4.3			
Read Write Inc. in Haringey, 2nd study	Y3–6	teacher/TA,/group				5.0			
BRP in Derbyshire	Y1	other adults, 1-1				4.9			
Family Literacy for New Groups	Y4	other adults, group	4.7						
Paired Reading, exps in control-group designs	Y1–11	other adults/pupils, 1-1	3.4	*	2.0	4.6	*	2.5	Continued to gain for 17 weeks and more
Catch Up Literacy in Norfolk, Norwich, 2002–03	Y2	teacher/TA, 1-1				4.6			
MTSR, pilot, exps	Y2	teacher, group				4.5			

Table A.6 continued

Study	Year group	Taught by	RG, accuracy			RG, comprehension			Follow-up
Phono-Graphix™ in Surrey	Y4	teacher, 1-1	4.5						
Paired Reading, all exps	Y1–11	other adults/pupils, 1-1	3.3			4.3			
THRASS in Bridgend	Y6	teacher, group	2.4			4.2			
Reading Recovery in Britain & Ireland	Y1–2	teacher, 1-1	4.2						Maintained up to 6 months
Personalised Learning	Y1	TA, 1-1				4.0			
MTSR in Bolton	Y2	teacher, group	3.7			3.9			
BRP in Derbyshire	Y2	other adults, 1-1				3.9			
BRP in Notts., 2004–05	Y2–6	other adults, 1-1				3.9			
BRP in Notts., 2005–06	Y2–6	other adults, 1-1				3.9			
THRASS in Bridgend	Y5	teacher, group	3.4			3.8			
Read Write Inc. in Haringey, 1st study	Y5-6	teacher/TA,/group	3.8						
Reciprocal Teaching	Y3–6	teacher, group	2.4			3.7			
Personalised Learning	Y3	TA, 1-1				3.7			
BRP in Derbyshire	Y4	other adults, 1-1				3.6			
Catch Up Literacy in Norfolk, county-wide, 2004–05	Y2–3	teacher/TA, 1-1				3.5			
Catch Up Literacy in Norfolk, King's Lynn	Y2	teacher/TA, 1-1				3.4			
BRP in Derbyshire	Y3	other adults, 1-1				3.4			
BRP in Derbyshire	Y6	other adults, 1-1				3.4			
Catch Up Literacy, pilot (exps in matched schools)	Y3	teacher/TA, 1-1	3.4	?	(0.4)				
Catch Up Literacy in Norfolk, county-wide, 2000–01	Y2–3	teacher/TA, 1-1				3.3			
Sounds~Write	Y1	teacher, group	3.3						
Catch Up Literacy in Norfolk, county-wide, 2005–06	Y2–6	teacher/TA, 1-1				3.2			
BRP in Derbyshire	Y5	other adults, 1-1				3.2			

Table A.6 continued

Study	Year group	Taught by	RG, accuracy			RG, comprehension			Follow-up
BRP in Redcar and Cleveland	Y1–6	other adults, 1-1				3.2			
BRP in Durham	Y3	other adults, 1-1				3.2			Maintained up to 12 months
Cued Spelling in Bristol	Y2–6	teacher, 1-1	2.1			3.1			
ENABLE ONE-TO-ONE	Y2	teacher or other adults, 1-1				3.0			
Lexia in York	Y2–6	computer & supervising adult, 1-1				3.0			
Sound Discovery in Norfolk	Y2–5	teacher, group				3.0			
Somerset (3), exps (counselling plus remedial)	Y3–4	other adults, 1-1	3.0						
ARROW in Bristol	Y2–6	computer & supervising adult, 1-1	2.3			2.9			
Reading Intervention for children with dyslexia	Y2–10	teacher or TA, group	2.9	ns	3.0				
Reading Recovery in Bristol	Y1–2	teacher, 1-1	2.9						

Table A.6 continued

Study	Year group	Taught by	RG, accuracy			RG, comprehension			Follow-up
BRP in Durham	Y4	other adults, 1-1				2.8			Maintained up to 12 months
FFT Wave 3	Y1–3	TA, 1-1	2.8						
THRASS in Bridgend	Y4	teacher, group	2.4			2.7			
Catch Up Literacy in Barnsley	Y2	teacher/TA, 1-1				2.7			
Toe by Toe	?	other adults, 1-1	2.7						
Catch Up Literacy, pilot (all experimentals)	Y3	teacher/TA, 1-1	2.6	?	(0.4)				
Read Write Inc. in Bristol	Y2–6	teacher/TA,/group	2.3			2.6			
Lexia in Norfolk	Y2–3	computer & supervising adult, 1-1				2.6			
RAPID	Y3-6	teacher/TA, 1-1				2.5	*	1.9	
BRP in Bradford, middle schs	Y4–7	other adults, 1-1	2.5	?	(0.8)				Continued to gain for up to 3 months
BRP in Bradford, first schs	Y1–3	other adults, 1-1	2.4	?	(0.8)				
THRASS in Bridgend	Y3	teacher, group	2.2			2.3			
THRASS in Hants.	Y2–5	teacher, group				2.3			
Family Literacy for New Groups, linguistic minorities	Y1	other adults, group	2.3						
SIDNEY	Y1–2	LSA, 1-1	2.3						
Phono-Graphix™ in Bristol	Y1	teacher, group	2.2						
MTSR, pilot, exps	Y5	teacher, group	2.2						
ENABLE PLUS	Y3–5	teacher/TA, 1-1/group	2.2						
Somerset (1), AI1 (counselling only)	Y4	other adults, 1-1	2.2	*	0.8				
Catch Up Literacy in Norfolk, Thetford	Y2–4	teacher/TA, 1-1				2.0			
Catch Up Literacy in Barnsley	Y4	teacher/TA, 1-1				2.0			

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Table A.6 continued

Study	Year group	Taught by	RG, accuracy			RG, comprehension			Follow-up
Catch Up Literacy in Hampshire	Y2–6	teacher/TA, 1-1				2.0			
BRP in Durham	Y5	other adults, 1-1				2.0			Maintained up to 12 months
Somerset (2) exps (counselling plus remedial)	Y4	other adults, 1-1	2.0						
Reading Intervention, general use	Y2–10	teacher or TA, group	2.0						
Reading Recovery (ECaR in London), BASWRT	Y2	teacher, 1-1	2.0	*	0.5				
Reading Intervention, orig., exps, Neale	Y2	teacher or TA, group	1.8	*	0.9	1.9	*	0.8	1 year on, exps still ahead relatively, but all groups making less than standard progress
Reading Recovery (L&S), exps	Y2	teacher, 1-1	1.9	*	1.1/0.8 †				Some gains maintained, some lost over 3 years
The Early Reading Research, KS2	Y5–6	teacher/TA, group	1.8						
Individual Spelling, group 2	Y2–3	teacher, group	1.8						

Table A.6 continued

Study	Year group	Taught by	RG, accuracy			RG, comprehension			Follow-up
Individual Spelling, group 1	Y2–3	teacher, group	1.7	*	0.8				Continued to gain up to 5 months on
Direct Phonics	Y1	teacher/TA, 1-1	1.7						
MTSR, pilot, AI2	Y5	teacher, group	1.7						
Somerset (1), exps (counselling plus phonics)	Y4	other adults	1.7	?	(0.8)				
Somerset (2), AI (remedial only)	Y4	other adults	1.7						
Reading Recovery (ECaR in London), WRAPS	Y2	teacher, 1-1	1.6	*	0.9				
MTSR in Southampton	Y2–6	teacher, group	1.6						
The Early Reading Research, KS2	Y3–4	teacher/TA, group	1.6						
BRP in Worcs, phase 1	Y1–6	other adults				1.5	*	0.8	Gain maintained over a further term
Reading Intervention, orig., exps, BASWRT	Y2	teacher or TA, group	1.5	*	1.1				
Somerset (1), AI2 (phonics only)	Y4	other adults	1.5	?	(0.8)				
Five Minute Box	Y1–4	LSA, 1-1	1.5						
Catch Up Literacy in Norfolk, Gt Yarmouth	Y6	teacher/TA, 1-1				1.4			
Reading Intervention for children with MLD	Y2–10	teacher or TA, group	1.4	ns	1.7				
Integrated Learning Systems, School A	Y3–6	computer & supervising adult, 1-1	1.4	*	0.5				
Catch Up Literacy, pilot (matched time)	Y3	teacher, group	1.4	?	(0.4)				
Catch Up Literacy, national, exps.	Y3	teacher/TA, 1-1	1.4	?	(1.0)				
The Early Reading Research, KS2	Y4–5	teacher/TA, group	1.4						

Table A.6 continued

Study	Year group	Taught by	RG, accuracy			RG, comprehension			Follow-up
Sound Discovery in Bedfordshire	Y6	teacher, group				1.3			
Reading intervention, orig., AI1 (reading only) Neale	Y2	teacher or TA, 1-1	1.3	ns	0.9	1.2	ns	0.8	
Catch Up Literacy, national, matched time	Y3	teacher, 1-1	1.3	?	(1.0)				
BRP in Worcs, phase 2	Y1–6	other adults, 1-1				1.2	*	0.8	
SPELLIT, exps.	Y2–4	teacher, ?	1.2	?	(0.7)				
PAT	Y4–7	teacher, 1-1	1.1	*	0.9				
RR (L&S), AI (Phonological Intervention)	Y2	teacher, 1-1	1.1	ns	0.9/0.8 †				
Reading Intervention, orig., AI1, BASWRT	Y2	teacher or TA, 1-1	1.1	ns	1.1				
Reading Intervention, orig., AI2, BASWRT	Y2	teacher or TA, 1-1	1.1	ns	1.1				
Reading Intervention, orig., AI2, Neale	Y2	teacher or TA, 1-1	1.1	ns	0.9	0.9	ns	0.8	
The Early Reading Research, KS1	Y1	teacher/TA, group	1.0	*	0.1				
SPELLIT, AI	Y2–4	other adults, 1-1	1.0						
Somerset (3), AI (remedial only)	Y3–4	other adults, 1-1	0.8						

Table A.6 continued

Key to abbreviations and symbols:

Comps	=	Children in comparison group
Exps	=	Children in experimental group
†	=	1st RG is vs within-schools comparison group, 2nd is vs between-schools comparison group
( )	=	RG based on non-equivalent control group but valid in its own right
*****	=	Difference in gains is statistically significant
ns	=	Difference in gains is statistically non-significant
?	=	Significance of difference in gains was not stated or was unreliable

Table A.7:
List of reading studies for primary level in decreasing order of effect size for whichever of accuracy and comprehension is the higher

Key:

Effect size above 0.80	=	Large impact, of substantial educational significance
Effect size between 0.50 and 0.80	=	Medium impact, of useful educational significance
Effect size between 0.25 and 0.50	=	Small impact, of modest educational significance
Effect size between 0 and 0.25	=	Very small impact, of doubtful educational significance
Negative effect size	=	Control/comparison group made more progress than experimental group

Study	Year group	Taught by	Effect size		Follow-up
			acc	compre	
The Early Reading Research, KS1	Y1	teacher or TA, group	3.5		(N.B. Effect size is misleading – see text)
Family Literacy in Hampshire	R	other adults, group	1.91		
Reading Recovery, ECaR in London, BAS	Y1	teachers, 1-1	1.30/ 1.50 ‡		
RITA, exps	Y3	computer and teacher, group	1.34		
Catch Up Literacy, pilot, experimentals in matched schools	Y3	teacher or TA, 1-1	0.97		
Somerset (4), exps (counselling plus DISTAR)	Y4	other adults, group	0.92		
Paired Reading	Y1–11	other pupils, 1-1	0.87	0.77	Gain was maintained up to 17 weeks on
Reading intervention, orig., exps (reading & phonology), Neale	Y2	teacher or TA, 1-1	0.60	0.86	1 year on, exps still ahead relatively, but all groups making less than standard progress
Reading Recovery (L&S), exps.	Y2	teachers, group	0.81/ 0.84 †	0.63/ 0.78 †	Some gains maintained, some lost, over 3 years
Reading Recovery, ECaR in London, WRAPS	Y1	teachers, 1-1	0.84/ 0.76 ‡		
Parental Involvement, experimentals	Y2–3	parents, 1-1	0.84		Gain was maintained up to 3 years on
IA&T (also within RITA)	Y2	teachers, group	0.72		Gain was lost
Family Literacy for New Groups, linguistic minorities	Y1	other adults, group	0.72		
Academy of Reading	Y4	computer & teacher, 1-1		0.62	
Academy of Reading	Y6	computer & teacher, 1-1		0.59	

Table A.7 continued

Study	Year group	Taught by	Effect size		Follow-up
			acc	compre	
Family Literacy for New Groups	Y4	other adults, group	0.58		
ILS, Phase II, School A	Y3–6	computer & teacher, 1-1		0.55	
AcceleRead AcceleWrite in Jersey	Y3–9	computer & teacher, 1-1	0.55		Continued to gain for up to 10 months
Academy of Reading	Y3	computer & teacher, 1-1		0.54	
Somerset (1), AI 1 (counselling only)	Y4	other adults, group	0.53		
Somerset (4), AI 1 (drama plus DISTAR)	Y4	other adults, group	0.50		
ELS study, ELS group	Y1	TA, group	0.44		
SIDNEY	Y1–2	LSA, 1-1	0.43		
Somerset (3)	Y3–4	other adults, 1-1	0.38		
ELS study, Reading Intervention group	Y1	TA, group	0.37		
Academy of Reading	Y5	computer & teacher, 1-1		0.36	
Reading Intervention, orig., exps (reading & phonology), BASWRT	Y2	teacher or TA, 1-1	0.36		
BRP in Worcs, phase 2	Y1–6	other adults, 1-1		0.33/ 0.18 ‡	
IA&T (also within RITA)	Y3	teachers, group	0.33		Gain was maintained 6 months on
Somerset (1), experimentals (counselling plus phonics)	Y4	other adults, 1-1	0.33		
Somerset (4), AI 2 (DISTAR only)	Y4	teachers, group	0.32		
Catch Up Literacy, pilot, AI (matched time)	Y2	teachers, 1-1	0.31		
RITA, exps.	Y2	computer and teacher, group	0.30		
Family Literacy Demonstration Programmes	Y1–2	other adults, group	0.29		Some further gains up to 12 weeks, then maintained up to 3 years
Somerset (1), AI 2 (phonics only)	Y4	teachers, group	0.27		
Reading Intervention, orig., AI 2 (phonology only), Neale	Y2	teacher or TA, 1-1	0.27	0.02	

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Table A.7 continued

Study	Year group	Taught by	Effect size		Follow-up
			acc	compre	
Further Literacy Support	Y5	TA, group		0.18/ 0.10 *	Maintained up to 12 months
RR (L&S), AI (Phonological Interv.), BASWRT (acc), Neale (compre)	Y2	teachers, group	0.08/ 0.16 †	0.13/ 0.09 †	
RAPID	Y3–6	teacher/TA, 1-1		0.12/ 0.10 **	
Somerset (2)	Y4	other adults, 1-1	0.09		
Parental Involvement, AI (extra teaching)	Y2–3	teachers, group	0.09		
Reading Intervention, orig., AI 1 (reading only), BASWRT	Y2	teacher or TA, 1-1	0.04		
Reading Intervention, orig., AI 2 (phonology only), BASWRT	Y2	teacher or TA, 1-1	0.02		
ILS, phase II overall	Y3–6	computer & teacher, 1-1		ns	
ILS, phase III	Y5	computer & teacher, 1-1		-0.02	
Time for Reading	R	volunteers, 1-1	-0.05	-0.08	
ILS, phase II, Sch. U	Y2 & 6	computer & teacher, 1-1		-0.40	

Key to symbols:

ns	=	Figure was not given but was stated or implied to be close to zero and statistically non-significant
†	=	1st effect size is vs within-schools comparison group, 2nd is vs between-schools comparison group
‡	=	1st effect size calculated from standardised scores, 2nd from r.a's
*****	=	1st effect size calculated from test scores, 2nd from Teacher Assessments
****	=	effect sizes calculated from different statistical models

Table A.8:
List of spelling studies for primary level in decreasing order of ratio gain

Key:

RG of 4 or above	=	Remarkable impact
RG between 3 and 4	=	Substantial impact
RG between 2 and 3	=	Useful impact
RG between 1.4 and 2	=	Modest impact
RG of less than 1.4	=	Impact of doubtful educational significance
RG of 1.0	=	Exactly standard progress

Study	Year group	Taught by	Exps		Comps	Follow-up
ARROW	Y1–6	computer & teacher, 1-1	14.1			
MTSR in Bolton	Y2	teachers, group	13.4			
AcceleRead AcceleWrite in Devon	Y5–6	computer & teacher, 1-1	9.8			
AcceleRead AcceleWrite in Wilts	Y3–6	computer & teacher, 1-1	6.2			
Cued Spelling (1)	Y4	parents, 1-1	4.1			
AcceleRead AcceleWrite in Jersey	Y3–9	computer & teacher, 1-1	4.0			Some further gain up to 6 months on
ENABLE ONE-TO-ONE	Y2	teacher/other adult, 1-1	3.5			
MTSR, pilot, AI 2	Y5	teachers, group	3.4			
Phono-Graphix™ in Bristol	Y2–6	teachers, group	3.3			
Cued Spelling in Bristol	Y2–6	teachers, 1-1	3.1			
Sounds~Write	Y1	teachers, group	2.7			
Reading Intervention, general use	Y2–10	teacher or TA, 1-1	2.6			
THRASS in Bridgend	Y3	teachers, group	2.5			
MTSR, pilot, exps	Y2	teachers, group	2.1			
AcceleRead AcceleWrite in Bristol	Y2–6	computer & teacher, 1-1	2.0			
Lexia in York	Y2–6	computer & teacher, 1-1	2.0			
Sound Discovery in Bedfordshire	Y5	teachers, group	2.0			
Individual Styles in Learning to Spell, group 1	Y2–3	teachers, 1-1	1.8			

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Table A.8 continued

Reading Intervention, orig., exps.	Y2	teacher or TA, 1-1	1.7	*	1.3	1 year on, exps still ahead relatively, but all groups making less than standard progress
Individual Styles in Learning to Spell, group 1	Y2–3	teachers, 1-1	1.7	*	1.2	Continued to gain up to 5 months
Read Write Inc. in Bristol	Y2–6	teacher/TA, group	1.7			
Catch Up Literacy in Norfolk, Norwich	Y2	teacher/TA, 1-1	1.6			
The Early Reading Research, KS2	Y5–6	teacher/TA, group	1.5			
Sound Discovery in Bedfordshire	Y6	teachers, group	1.4			
Reading Intervention, orig, AI 1	Y2	teacher or TA, 1-1	1.3			
Reading Intervention, orig, AI 2	Y2	teacher or TA, 1-1	1.3			
Lexia in Norfolk	Y2–3	computer & teacher, 1-1	1.0			
Catch Up Literacy in Norfolk, King's Lynn	Y2	teacher/TA, 1-1	1.0			
THRASS	Y6	teachers, group	1.0			
THRASS	Y4	teachers, group	0.9			
THRASS	Y5	teachers, group	0.9			
Catch Up Literacy in Norfolk, county-wide, 2000-01	Y2–3	teacher/TA, 1-1	0.5			
MTSR, pilot, exps	Y5	teachers, group	-3.6			

Key to abbreviations and symbol in Table A.8:

Comps	=	Children in comparison group
Exps	=	Children in experimental group
*	=	Difference in gains is statistically significant

Table A.9:
List of spelling studies for primary level in decreasing order of effect size

Key:

Effect size above 0.80	=	Large impact, of substantial educational significance
Effect size between 0.50 and 0.80	=	Medium impact, of useful educational significance
Effect size between 0.25 and 0.50	=	Small impact, of modest educational significance
Effect size between 0 and 0.25	=	Very small impact, of doubtful educational significance
Negative effect size	=	Control/comparison group made more progress than experimental group

Study	Year group	Taught by	Effect size	Follow-up
RITA, exps.	Y2	computer & teacher, 1-1	0.98	
RITA, exps.	Y3	computer & teacher, 1-1	0.77	
IA&T (also within RITA)	Y2	teachers, group	0.56	Gain was maintained up to 6 months on
Improving Spelling through Teaching Morphemes	Y5	teachers, group	0.49	
IA&T (also within RITA)	Y3	teachers, group	0.44	Gain was partly lost 6 months on
Reading Intervention, orig, exps.	Y2	teacher or TA, 1-1	0.36	
Individual Styles in Learning to Spell, group 1	Y2–3	teachers, 1-1	0.30	
AcceleRead AcceleWrite in Jersey	Y3–9	computer & teacher, 1-1	0.27	Continued to gain up to 10 months
Improving Spelling through Teaching Morphemes	Y3	teachers, group	0.26	
Improving Spelling through Teaching Morphemes	Y6	teachers, group	0.22	
Improving Spelling through Teaching Morphemes	Y4	teachers, group	0.15	
Reading Intervention, orig, AI 2	Y2	teacher or TA, 1-1	0.02	
Reading Intervention, orig, AI 1	Y2	teacher or TA, 1-1	-0.02	
Time for Reading	R	other adults, 1-1	-0.15	

Key to abbreviation:

Exps = Experimentals

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Table A.10:
List of writing studies for primary level in decreasing order of effect size

N.B. There are no schemes with writing data at secondary level.

Key:

Effect size above 0.80	=	Large impact, of substantial educational significance
Effect size between 0.50 and 0.80	=	Medium impact, of useful educational significance
Effect size between 0.25 and 0.50	=	Small impact, of modest educational significance
Effect size between 0 and 0.25	=	Very small impact, of doubtful educational significance
Negative effect size	=	Control/comparison group made more progress than experimental group

Study	Year group	Taught by	Effect size	Follow-up
Reading Recovery, ECaR in London	Y1	teacher, 1-1	1.60	
Paired Writing (2)	Y6	other pupils, 1-1	0.55	
Paired Writing (1), cross-ability	Y4	other pupils, 1-1	0.41	
Paired Writing (1), same ability	Y4	other pupils, 1-1	0.32	

Further Literacy Support	Y5	TA, group	0.16 / 0 *	Status maintained a year later

Key to symbol:

* = 1st effect size calculated from test scores, 2nd from Teacher Assessments

Table A.11:
List of reading studies for secondary level in decreasing order of ratio gain for whichever of accuracy and comprehension is the higher

N.B. The only follow-up data reported for any secondary scheme were for a small sub-sample of the experimental group in the 3rd Literacy Acceleration study – for this information see the entry earlier in this Appendix. Given this, there are no columns for follow-up data in Tables A11–14.

Key:

RG of 4 or above	=	Remarkable impact
RG between 3 and 4	=	Substantial impact
RG between 2 and 3	=	Useful impact
RG between 1.4 and 2	=	Modest impact
RG of less than 1.4	=	Impact of doubtful educational significance
RG of 1.0	=	Exactly standard progress

Study	Year group	Taught by	RG, accuracy			RG, comprehension		
			Exps		Comps	Exps		Comps
Read Write Inc. Fresh Start in Cornwall	Y7	teacher, group				8.0		
THRASS	Y7	teacher, group	4.0			5.7		
THRASS	Y8	teacher, group	5.3			5.4		
BRP in Derbyshire	Y8	other adults, 1-1				5.0		
BRP in Derbyshire	Y7	other adults, 1-1				4.1		
Literacy Acceleration, 2nd cohort	Y7	other adults, 1-1				3.7	*	1.7
Literacy Acceleration in Cornwall	Y7	other adults, 1-1				3.7	*	1.6
ENABLE PLUS (KS3)	Y7–9	TA/LSA, 1-1				3.7		
Corrective Reading	Y7	teacher/TA, group	3.0					
Literacy Acceleration, 1st cohort	Y7–8	other adults, 1-1				2.4	*	0.4
Read Write Inc. Fresh Start in Leicester	Y7	teacher, group				2.3		
Toe by Toe	Y7	other adults, 1-1	2.3					
Read Write Inc. Fresh Start, DfES study	Y7–9	teacher, group				1.6		
The Secondary Reading Research, BAS (acc.), Suffolk (compre.)	Y7	teacher, group	0.8	?	(0.6)	1.4	?	(1.0)
Catch Up Literacy	Y7–8	teacher/TA, 1-1	1.4					
Sound Training for Reading	Y9	teacher, group	1.4	*	0.3			
The Secondary Reading Research, NFER tests	Y7	teacher, group	1.1	?	(0.7)	0.9	ns	0.9

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Table A.11 continued

Key to abbreviations and symbols:

Comps	=	Children in comparison group
Exps	=	Children in experimental group
( )	=	RG based on non-equivalent control group but valid in its own right
*****	=	Difference in gains is statistically significant
ns	=	Difference in gains is statistically non-significant
?	=	Significance of difference in gains was not stated or was unreliable

Table A.12:
List of reading studies for secondary level in decreasing order of effect size for whichever of accuracy and comprehension is the higher

Key:

Effect size above 0.80	=	Large impact, of substantial educational significance
Effect size between 0.50 and 0.80	=	Medium impact, of useful educational significance
Effect size between 0.25 and 0.50	=	Small impact, of modest educational significance
Effect size between 0 and 0.25	=	Very small impact, of doubtful educational significance
Negative effect size	=	Control/comparison group made more progress than experimental group

Study	**Year group**	**Taught by**	**Effect size**	
			acc	compre
Literacy Acceleration in Cornwall, exps	Y7	other adults, 1-1		1.14
Sound Training for Reading	Y9	teacher, group		0.65
Literacy Acceleration, 2nd cohort, exps	Y7	other adults, 1-1		0.62
ILS, Phase II, School M	Y7–9	computer & teacher, 1-1		0.60
The Accelerated Reader, group 1	Y7	computer & teacher, 1-1		0.55
Literacy Acceleration, 1st cohort, exps	Y7–8	other adults, 1-1		0.45
Academy of Reading	Y7	computer & teacher, 1-1		0.44
Academy of Reading	Y8	computer & teacher, 1-1		0.40
Literacy Acceleration, 2nd cohort, comps	Y7	other adults, 1-1		0.37
Read Write Inc. Fresh Start, DfES study	Y7–9	TA, group		0.34
The Secondary Reading Research, NFER tests	Y7	TA, group	0.26	0
Read Write Inc. Fresh Start in Cornwall	Y7	TA, group		0.25
Literacy Acceleration in Cornwall, comps	Y7	other adults, 1-1		0.23
Philosophy for Children	Y7	teacher, group		0.23
The Secondary Reading Research, BAS (acc.), Suffolk (compre.)	Y7	TA, group	0.13	0.22
The Accelerated Reader, group 2	Y7	computer & teacher, 1-1		0.21
ILS, phase III	Y8	computer & teacher, 1-1		0.08
Literacy Acceleration, 1st cohort, comps	Y7–8	other adults, 1-1		0
ILS, Phase II, overall	Y7–9	computer & teacher, 1-1		ns
ILS, phase III	Y9, 11	computer & teacher, 1-1		ns

Key to symbol:

ns = Figure was not given but was stated or implied to be close to zero and statistically non-significant

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Table A.13:
List of spelling studies for secondary level in decreasing order of ratio gain

Key:

RG of 4 or above	=	Remarkable impact
RG between 3 and 4	=	Substantial impact
RG between 2 and 3	=	Useful impact
RG between 1.4 and 2	=	Modest impact
RG of less than 1.4	=	Impact of doubtful educational significance
RG of 1.0	=	Exactly standard progress

Study	Year group	Taught by	Exps		Comps
Literacy Acceleration, 1st cohort	Y7–8	other adults, 1-1	2.0	*	0.40
THRASS	Y8	teacher, group	2.0		
THRASS	Y7	teacher, group	1.8		
Literacy Acceleration, 2nd cohort	Y7	other adults, 1-1	1.6	ns	1.6
Read Write Inc. Fresh Start, DfES study	Y7–9	teacher, group	0.9		
Read Write Inc. Fresh Start in Leicester	Y7	teacher, group	0.8		
The Secondary Reading Research	Y7	TA, group	0.6	?	(0.5)

Key to abbreviations and symbols:

Comps	=	Children in comparison group
Exps	=	Children in experimental group
( )	=	RG based on non-equivalent control group but valid in its own right
*	=	Difference in gains is statistically significant
ns	=	Difference in gains is statistically non-significant
?	=	Significance of difference in gains was not stated or was unreliable

Table A.14:
List of spelling studies for secondary level in decreasing order of effect size

Key:

Effect size above 0.80	=	Large impact, of substantial educational significance
Effect size between 0.50 and 0.80	=	Medium impact, of useful educational significance
Effect size between 0.25 and 0.50	=	Small impact, of modest educational significance
Effect size between 0 and 0.25	=	Very small impact, of doubtful educational significance
Negative effect size	=	Control/comparison group made more progress than experimental group

Study	Year group	Taught by	Effect size
The Secondary Reading Research	Y7	TA, group	0.06
Read Write Inc. Fresh Start, DfES study	Y7–9	teacher, group	0

N.B. There are no data for writing at secondary level.

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Table A.15:
Statistical comparisons between experimental and alternative intervention (AI) groups at primary level

N.B. There were no secondary studies with AI groups.

Catch Up Literacy, pilot and national studies	not stated
Early Literacy Support	The AI was Hatcher's Reading Intervention. On all three measures, both groups made good progress, but the differences in gain were tiny and ns (between-groups effect sizes: -0.07, 0.08, -0.14)
Improving Spelling by Teaching Morphemes, RCT within 1st study	The morphology group made significantly better progress than the group doing comprehension tasks
Improving Spelling by Teaching Morphemes, 2nd study	The morphology group made significantly better progress than the group receiving 'NLS spelling sessions in addition to their literacy hour'
Inference Training	■ On accuracy, all differences in gains among the two experimental and two AI groups were non-significant ■ On comprehension, Inference Training was more effective for less-skilled comprehenders than for skilled comprehenders; Inference Training was more effective than rapid decoding (AI2) for less skilled comprehenders; BUT comprehension exercises (AI1) were just as effective as Inference Training
Multi-Sensory Teaching System for Reading (initial study)	not stated
Paired Reading	(too numerous and disparate to report)
Parental Involvement	The experimental and AI groups could not be compared at post-test because they differed significantly at pre-test
Phonology with Reading	The experimental group made better progress than the AI 'Oral Language' group in reading accuracy, but not in comprehension
Reader's Intelligent Teaching Assistant (RITA)	The 'alternative intervention' here was Interactive Assessment and Teaching, the experimental intervention from an earlier experiment by the same authors. RITA and IA&T did not differ on any measure
Reading Intervention (original)	The experimental intervention (Reading with Phonology) was significantly better than both AIs (reading-only, phonology-only) on all three measures
Reading Recovery in London and Surrey	No information was given on statistical significance of differences between experimental (Reading Recovery) and AI (Phonological Intervention) groups
Somerset (1)	Professional counselling plus remedial phonics was no better than counselling only (AI1) or remedial phonics only (AI2); but professional counselling only was better than remedial phonics only or no intervention, and equal to professional counselling plus remedial phonics
Somerset (2)	Counselling by non-professionals plus remedial teaching was no better than remedial teaching alone

Table A.15 continued

Somerset (3)	Counselling by non-professionals plus remedial teaching was better than remedial teaching alone
Somerset (4)	'Therapeutic' conditions (experimentals = counselling plus DISTAR; AI1 = drama plus DISTAR) made significantly greater gains than the other two groups (AI2 = DISTAR only; controls = no intervention). The two therapeutic conditions did not differ significantly, and the other two groups also did not differ significantly
Sounds~Write	The Sounds~Write group made substantial progress, while the AI group (using *Progression in Phonics*) made barely standard progress
SPELLIT	The SPELLIT group made better progress than those using the 'Home Support Programme consisting of activities and exercises to be done at home for around 15 minutes a day, for 5 days a week'

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How should this mass of comparative detail on impact measures be interpreted?

The first thing to be said is that, given the uneven quality of the description, analysis and reporting of the studies, interpretation needs to be cautious and tentative. It is not the case that some schemes have been proven effective, and others ineffective, without qualification. High RGs and effect sizes do show that the relevant approaches have worked for some children in some circumstances, and *may* work for others, if implemented with similar care in similar circumstances. Low RGs and effect sizes show only that the relevant approaches have not worked for some children in some circumstances, and have no implications for the future, since they *might* work for other children in different circumstances.

That said, from inspection of the data and from the wider literature, it has been deduced that:

- RGs of exactly 1.0 represent standard progress, or 'holding one's own'. Anything above this represents better than standard progress (but see the next point), while anything less means that the children are slipping (further) behind;
- RGs below 1.4, and effect sizes below 0.25, represent an impact that does not seem educationally significant. Pupils in these schemes did not just stay where they were, and did make some progress, in absolute terms; but it was slow, and they made little or no relative progress compared to control groups receiving no special intervention. Thus schemes (or conditions within schemes) with impact measures of this order did not seem to produce any impact over and above ordinary teaching, unless it is argued that 'holding their own' was a good result for such children – in other words, that without the intervention they would have fallen even further behind. Schemes in this group may be considered to have been 'less effective';
- all RGs above 1.4 and effect sizes above 0.25 represent impact that is at least satisfactory, and in some cases excellent. Schemes in this group may be considered to have been 'more effective'. Keys above each of Tables A6–14 make further distinctions within RGs above 1.4 and effect sizes above 0.25.

The RG list for reading contains few values below 1.0 ('normal progress'), and all but a few of those RGs arose from comparison groups. This finding is, however, circular: children receiving ordinary teaching mostly made the progress to be expected of children receiving ordinary teaching. What is more interesting is that a few comparison groups had RGs above 1.4, in fact some above 2.0, and these children were therefore making better than expected progress despite, apparently, receiving no extra intervention. Perhaps the experimental schools were observed by others, and therefore the relevant schemes 'leaked' their benefits into other schools in the areas in which they took place, and influenced non-participating schools to raise their game too. If this is true, it would be an argument for implementing initiatives at a fairly high density (though it would play even more havoc with evaluation statistics).

The amount of data at secondary level, and on spelling and especially on the compositional aspect of writing at primary level remains insufficient to sustain more than a few generalisations.

All the generalisations that the data seem to warrant are stated in chapter two.

A.4 Follow-up studies

In many cases the impact observed during educational interventions is found to diminish or even vanish afterwards. Was this true of the schemes analysed here? Of the 121 studies analysed, only 21 provided any information on re-tests of participating children at some point after the end of the intervention. These were: AcceleRead AcceleWrite in Jersey, BRP in Bradford, Durham and Worcestershire, Family Literacy Demonstration Programmes (reading and writing), Further Literacy Support (reading and writing), Individual Spelling, IA&T, Paired Reading, Parental Involvement, Phonology with Reading, Reading Intervention (original), Reading Recovery in London and Surrey and for the 1997–98 cohort and ECaR across Britain and Ireland, Sound Discovery in Bedfordshire, The Early Reading Research (the KS1 study), Time for Reading, and Literacy Acceleration (3rd study). For details, see the entries in this Appendix.

Conclusion on follow-up studies

The picture is uneven, but broadly positive. In nine cases, namely, AcceleRead AcceleWrite in Jersey, BRP in Bradford (middle schools), Durham and Worcestershire, Family Literacy Demonstration Programmes (reading and writing), Individual Spelling, Paired Reading, Literacy Acceleration (sub-sample in 3rd study), children continued to make relative gains at least in the period immediately after the intervention. In most of these cases there was only one follow-up; in Family Literacy Demonstration Programmes the children 'plateaued' after the first follow-up but maintained their gains at 2nd and 3rd follow-ups; in AcceleRead AcceleWrite in Jersey even the 2nd follow-up showed further relative gains.

In seven studies, namely, ELS (both groups), FLS (reading and writing), Parental Involvement, RR in Britain and Ireland (3- and 6-month follow-ups), Sound Discovery in Bedfordshire, The Early Reading Research (KS1), the children maintained their gains.

In all six cases where National Curriculum test data were available, they showed good results: FLS, KS2 reading and writing; RR, 1997–98 cohort, Key Stage 1 and Key Stage 2 reading; RR, ECaR in Britain and Ireland, Year 2 children in England, Key Stage 1 reading and writing.

In Time for Reading, there were no relative gains during the intervention, and none at follow-up three years on either.

Only in Phonology with Reading and Reading Recovery in London and Surrey was there definite evidence of 'wash-out', that is, of children losing the gains they had made during the intervention – though it must be recognised that such findings are less likely to be reported. And even in the three-year follow-up to Reading Recovery, wash-out was not universal – children who had been non-readers at age six continued to benefit. There was partial wash-out in IA&T – Year 2's gain in reading was completely lost, but other evidence was more positive. In Reading Intervention (original), the experimental group maintained their relative position – but both they and the other groups had made less than standard progress, so that the gains were in fact only maintained to an extent.

Though it is therefore still possible to say that most gains were maintained, it seems impossible to generalise about factors which made the difference between wash-out and sustaining gains.

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Ref: 00688-2007BKT-EN

Produced by the
Department for Children, Schools and Families
www.dcsf.gov.uk

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