What works for pupils in Wales with literacy difficulties?

The effectiveness of intervention schemes

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Foreword

The Welsh Assembly Government Words Talk-Numbers Count National Basic Skills Strategy is an all-age strategy. One of its key aims is to ensure that there is a significant increase in the number of children who enter secondary schools with good basic skills – the ability to speak and listen, read, write and use numbers with confidence. Likewise, we aim to ensure that more young people leave secondary schools with good basic skills.

Children falling behind in their learning need to be identified and, where necessary, they need to be provided with additional support. Almost all schools in Wales hold the Quality Mark. This requires that the schools adopt a strategic approach to identifying and supporting learners according to their literacy and numeracy needs. Since 2002 additional funding has been provided for schools through their Local Education Authorities to support the development of appropriate catch-up support programmes. These 'Strategic Intervention Grants' were initially used in the primary sector, but are increasingly being used in the secondary sector.

The range of programmes implemented in schools reflects the range of needs of learners. In order to build upon the successes of the intervention programmes it is important that we develop an understanding of what works best for pupils with particular literacy difficulties. The evidence gathered in this report provides us with a sound basis for future planning in that it is clear that the right kind of support at the right point in time can make a significant difference to learning. One of the most important implications of the research is that, in general, normal classroom teaching does not enable children with significant literacy difficulties to make progress. This in turn indicates that intervention that is strategic, targeted and appropriate can, and does, make a difference.

This publication reinforces the good practice that is taking place in schools across Wales. It also provides an evidence base which allows us to take the best practice forward. Whilst we can and should celebrate what has and is being achieved, we also need to make sure that we share information so that educators across Wales can make informed decisions when planning for the future. I am confident that *What works for pupils in Wales with literacy difficulties?* will allow us at national, regional and school level to plan and deliver effective intervention programmes in schools.

John Griffiths
Deputy Minister for Skills

Acknowledgements

This report is intended to be complementary to:

Brooks, G. (2007) *What Works for Pupils with Literacy Difficulties? The Effectiveness of Intervention Schemes*. 3rd edition. London: DCSF. Ref: 00688-2007BKT-EN. Available at: **http://publications.teachernet.gov.uk/eOrderingDownload/pri_lit_what_works0068807.pdf**

The two previous editions were:

(1) Brooks, G., Flanagan, N., Henkhuzens, Z. and Hutchison, D. (1998) *What Works for Slow Readers? The Effectiveness of Early Intervention Schemes.* Slough: NFER.
(2) Brooks, G. (2002) *What Works for Children with Literacy Difficulties? The Effectiveness of Intervention Schemes.* London: DfES Research Report no.RR380. Available at: **http://www.dfes.gov.uk/research/data/uploadfiles/RR380.pdf**

The 2002 edition formed the basis of:

Enters, I. and Brooks, G. (2005a) *Boosting Reading in Primary Schools*. London: Basic Skills Agency.

Of which a bilingual Welsh/English edition also appeared:

Enters, I. and Brooks, G. (2005b) *Hybu Darllen mewn Ysgolion Cynradd/Boosting Reading in Primary Schools*. Llyndain: Yr Asiantaeth Sgiliau Sylfaenol/London: Basic Skills Agency.

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Chapter one

Focus and intention of this report

1.1 The focus

Most children in Wales learn to read and write satisfactorily first time through home support and/or high-quality classroom teaching, 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 in Wales, and is intended to inform schools' choices among such schemes.

More exactly, the questions this report addresses are:

> **What intervention schemes are there which have been used in Wales in an attempt to boost the reading, spelling or overall writing attainment of lower-achieving pupils in at least one of Y1–9, and which have been quantitatively evaluated there?**
>
> **What are those schemes like, and how effective are they?**

The restriction to schemes used and evaluated in Wales is intended to make the information as directly and locally relevant as possible. Information on many other schemes which have been used elsewhere in the UK is available in Brooks (2007), and for ideas from other English-speaking countries, see Hurry (2000). Chapter 2 of Brooks (2007) should also be consulted for 'Signposts' to choosing between schemes based on the much larger set of schemes which have been quantitatively evaluated in the UK as a whole; a Welsh translation of much of that chapter appears in Enters and Brooks (2005b). The appendix in Brooks (2007) should also be consulted for details of research designs.

The intention is to make 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.

1.2 The schemes covered

The eight schemes are listed in Table 1 with indications of the year groups involved. Three schemes were either wholly in Welsh or had a Welsh version. All schemes covered reading. Two also provided data on spelling, and two others on writing. Only the Dyfed Improving Reading Standards in Primary Schools Project had a 'no intervention' ('ordinary classroom teaching') comparison group. Three provided data on at least one follow-

up point. It should also be noted that none of these studies included an alternative intervention, a different scheme being evaluated at the same time to investigate any difference in effectiveness.

Table 1: List of schemes covered

Name of scheme	Year groups	Welsh	Spelling	Writing	Comparison group	Follow-up
Catch Up Literacy	Y2–9					
Llythrennedd Dyfal Donc	Y2–7	✔	Y7 only			
DDAT/Dore	Y6–7					✔
Dyfed Project	Y1	✔			✔	
Family Literacy	Ages 3–6			✔		✔
Reading Recovery	Y1–2			At KS1		✔
STARS in Schools/ STARS Cymraeg	Y2–3	✔	✔			
THRASS	Y3–8					

Initial schemes for the teaching of reading and writing are deliberately not covered because the focus is on catch-up schemes. However, it is worth noting that, across England and Wales, in the wake of the Rose Review (Rose, 2006) there has been renewed interest in phonics and a surge in production of new phonics schemes – to such an extent that the Department for Children, Schools and Families in England has established a special website with information on phonics schemes (http://www.standards.dfes.gov.uk/phonics/). Among those listed is POPAT (Programme of Phoneme Awareness Training), which was largely developed in Pembrokeshire and whose originator, Prue Popat, died while this report was being prepared. POPAT is also used widely as a catch-up scheme in Wales, but on an individual basis; hence no group data on its use in this way were available for this report. Brooks (2007) notes about 12 phonics-based schemes which are in use as catch-up schemes in the UK, but of these only THRASS has data specifically from Wales (see section 3.8).

1.3 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 in 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 in Brooks (2007); 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 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, provided (usually) that data are available from a control or comparison group as well as the experimental ('treatment') group. An effect size can sometimes be calculated in the absence of a control or comparison 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 the Family Literacy reading data in the Appendix).

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 rules of thumb for interpreting both forms of impact measure are given at the end of the introductory section of the Appendix.

1.4 Features of this report

The report covers such quantitative evidence as is available on catch-up schemes intended to boost the reading, spelling or writing of pupils aged five to 14. Two limitations should be noted at once: (1) There is no evidence available for pupils in Wales aged 15 to 16 (and precious little elsewhere); (2) There is much less evidence on spelling, and especially writing, than on reading. There is a brief description of each scheme and of the evidence on it in Chapter 2, and a full analysis of the data on it in the Appendix. The Appendix also includes:

- systematic indications of whether schemes reported statistical significances of gains and/or a follow-up;

- discussion of the pupils' starting and ending levels and the progress made. The terms used for this are listed towards the end of the introductory section of the Appendix, immediately before the 'rules of thumb' for interpreting ratio gains and effect sizes, and similar indications about starting and ending levels and progress are also given at relevant points in each main entry in Chapter 2. This is intended to show more precisely what works for different groups and enable teachers to assess which interventions provide the best match to the needs they have identified.

Chapter two

Main implications from research, and methods for choosing a scheme

2.1 Main implications from research

Some of the findings stated here are based on the wider literature analysed in Brooks (2007), but wherever possible they are linked to the evidence on what has worked for pupils in Wales.

- In general, normal classroom teaching does not enable children with significant 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 co-ordinated effort and training.

- Working on building a child's self-esteem and reading in parallel has definite potential.
  Implication: Building strong and trusting relationships between teacher and taught is an essential prerequisite for accelerating learning. Schools need to provide a coherent network, using multi-agency support.

- 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.

- Work on phonological skills needs to 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.

- Highly structured schemes work best for children struggling with spelling.
  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.

- Technology used to boost literacy attainment should be targeted as precisely as possible to provide value for money and specific impact.
  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 programs can be used for each child appropriately.

- Large-scale schemes, although initially expensive, can give good value for money in the long term.
  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 resources are limited and partners are available and can be given appropriate training and on-going support, reading 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.

- Success with children with severe problems is elusive. This finding reinforces the need for skilled, 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 on-going diagnosis based on close observation.

- Successful implementation of effective schemes can double the standard rate of progress. Since this can be achieved, 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 initially effective schemes incorporating follow-up studies showed that children maintained their 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.

2.2 Methods to meet different needs

Here is a checklist for teachers, teaching assistants and other partners.
It describes activities that are often useful when addressing the particular needs of children with reading difficulties. The activities are linked to improving motivation, reading for meaning, phonological skills and fluency.

We know there are many reasons why some children make less rapid reading progress than others. Identifying those children likely to need or needing additional help and analysing their particular problems are essential processes when determining an appropriate intervention or scheme.

Poor diet, lack of role models, insecurity at home or school, time-out from nursery or school, English as an additional language, low expectations and passivity, unrecognised eyesight or hearing problems, poor resources, little interaction through talk in the home are all recognised as possible inhibitors to effective learning. The increasing focus on inclusion in our schools gives an opportunity to gather a multi-disciplinary team to pool knowledge of each child in need of support in basic skills.

This report recognises the researched validity of these and other issues, but focuses on areas identified as particularly important when working to improve children's reading.

Schools need to take account of various factors when deciding appropriate methods:

- age and attainment of children
- numbers involved
- different levels of need
- short-term and long-term staffing costs
- resources and time available.

If a scheme targets children with the lowest attainment, the rate of progress tends to be slower, but may well have longer lasting impact.

The areas with a range of possible actions to address them are listed under four main headings for consideration with each child and can be used to inform an individual or group action plan. Many other schemes that would fit under each heading are analysed in Brooks (2007).

Most children with difficulties have a variety of needs. Some of the schemes present a general approach underpinned by a theoretical model. Others provide a specific focus to address particular needs. The following list of approaches is a distillation.

2.3 Improving motivation to read

For the child with few role models or an 'unreading' background:

- sharing with enthusiastic peer
- regular reading with trained partner
- self-choice from manageable range of high-quality texts
- acting out extracts and speeches; story-telling and retelling
- talking about pictures in books and pictures in the head
- making and using board games with texts
- finding and sharing favourite books and extracts

- gathering reading about child's interests and potential interests
- reading about the environment with an adult
- building confidence and success through praise and clear steps for further improvement
- providing a structured reward system for progress
- sensitive involvement of home in building respect and practical help.

Schemes with an emphasis on motivation:
Catch Up Literacy; Dyfal Donc Llythrennedd; the Dyfed Improving Reading Standards in Primary Schools Project; Family Literacy; Reading Recovery.

2.4 Improving reading for meaning

For the child who decodes with little understanding:

- texts chosen for richness and depth on the edge of child's comprehension level
- identifying key words, phrases and sentences
- sentence breaking and making in new forms
- who, how, what, where, when, why questioning
- pictures of characters and scenes
- translation of text into pictures, diagrams or timelines
- talking about families of words
- changing words in sentences to change the sense
- cloze exercises from a range of words, phrases and clauses
- storytelling and retelling; puppet play
- summarising and explaining talk
- adult models response to text, child imitates and takes on role.

Schemes with an emphasis on comprehension:
Catch Up Literacy; Dyfal Donc Llythrennedd; the Dyfed Improving Reading Standards in Primary Schools Project; Family Literacy; Reading Recovery; STARS in Schools/STARS Cymraeg.

2.5 Improving phonological and word-level skills

For the child who needs help with the sounds of English words or parts of words:

- texts chosen for specific sound patterns, rhythms, chanting and fun!
- explicit, systematic and structured modelling of and responding to sounded vowels, diphthongs, consonants, consonant clusters and phonemes in parallel with visual letter and grapheme recognition
- explicit teaching of blending, segmenting and phoneme manipulation
- short rhymes, poems, songs with highlighted sections and actions for reading aloud
- families of graphemes in verses playing with their different sounds
- word saying, making and breaking
- onomatopoeic words for chanting with actions.

Schemes with an emphasis on improving phonological and word-level skills:
Reading Recovery; STARS in Schools/STARS Cymraeg; THRASS.

2.6 Improving fluency

For the child who can decode slowly, but lacks fluency for various reasons:

- texts chosen with speech in mind: dialogue, drama, scripts, descriptive prose and poetry
- regular reading aloud with a supportive partner
- time to practise a piece, explore its meaning as well as its sounding, before reading aloud with a partner
- focus on connectives in preparing to read
- focus on punctuation in preparing to read
- focus on key words in preparing to read
- joining in prepared choral reading of rich texts
- avoid finger pointing at each word or part of word, work to punctuation divisions, not line endings
- timed reading of sections followed by check on understanding; there is no necessary correlation between being a slow reader and having poor comprehension skills
- using different ways of speaking the words – angry, happy, tired, etc.

Schemes with an emphasis on improving fluency:
Catch Up Literacy; Dyfal Donc Llythrennedd; DDAT/Dore; Family Literacy; Reading Recovery; THRASS.

Chapter three

The schemes and their evaluations

This chapter describes the eight schemes, mainly in alphabetical order, the exception being that Dyfal Donc Llythrenned immediately follows Catch Up Literacy, as it is the Welsh-language version. 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 name and address are usually given.

3.1 Catch Up Literacy

Catch Up Literacy is a one-to-one literacy intervention for struggling readers aged six to 14, available as part of an integrated training and resource package. It centres on a ten- to 15-minute structured teaching session delivered once or twice a week by a teacher or teaching assistant and targeted to the needs of individual children. In 2007 it was in use in more than 4,000 schools across the UK, and had been implemented in clusters of schools by more than 60 LAs. 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 Y3. Further research and extensive trialling has extended the scheme to support struggling readers in Y2, Y4–6, secondary schools up to Y9, and a range of other settings (such as looked-after children). A Welsh-medium version, called Llythrennedd Dyfal Donc, has also been developed and has its own entry in section 3.2.

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 whilst 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 three interactive CDROMs 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

For a full account of research on Catch Up Literacy see Brooks (2007: 43–44, 92, 147–52, 239). The data analysed here are for:

- nearly 6,000 Y2–6 pupils in about 200 schools in six LAs (Caerphilly, Denbighshire, Flintshire, Merthyr Tydfil, Rhondda Cynon Taf, Vale of Glamorgan) for the period 2002–06 (N.B. A few of the schools were Welsh-medium, but their results could not be separated out in the data supplied)
- 175 Y7–9 pupils in 13 schools in two LAs (Rhondda Cynon Taf, Vale of Glamorgan).

Results at both levels show useful progress in reading comprehension.

References

Unpublished data supplied by Julie Lawes

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3.2 Llythrennedd Dyfal Donc

Scheme

Dyfal Donc Llythrennedd is the Welsh-language version of Catch Up Literacy – see section 3.1 for details.

Evaluations

The data on Dyfal Donc Llythrennedd analysed here are for:

- 32 Y2–6 pupils from eight schools in Carmarthen
- 24 Y7 pupils from one high school in Flintshire.

The primary results show useful progress in reading. The Y7 results show useful progress in reading, modest progress in spelling.

Reference

Unpublished data supplied by Julie Lawes

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3.3 DDAT/Dore

A number of non-linguistic (medical or physiological) approaches for improving literacy 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). Exaggerated claims have been for some such programmes – see Goldacre (2006).

No such approaches have featured in any of the previous reports in this series, and the study analysed here is very small (N=11) and would normally be excluded on that ground. However, it is known that there is particular interest in the DDAT/Dore programme in Wales and it has therefore been included. For a study on a different movement programme carried out in Northern Ireland with a larger sample (N=60) and a much more rigorous research design (a randomised controlled trial), see McPhillips *et al.* (2000).

Scheme

DDAT stands for *Dyslexia, Dyspraxia and Attention Deficit Treatment*. It is based on the idea that difficulties of reading and spelling can arise out of incomplete development of the functions of the cerebellum, the part of the brain which deals with skills that become automatic, such as balance and co-ordination, as well as well-learned skills like reading and spelling.

The DDAT approach entails assessing the ability of the client to use information from the balance organ of the inner ear, from the position of the feet and hips, and from vision in order to maintain balance and co-ordination. Following this detailed assessment, using specialist equipment and trained staff, an individual programme of physical exercises to be completed each day is prepared for each client, in order to improve the appropriate aspects of balance and co-ordination.

Throughout the programme clients are required to complete these exercises for two periods of approximately ten minutes each, daily, at school or at home, including weekends and school holidays. Following the initial assessment, reviews are held at the DDAT centre every six weeks, to revise and adjust the exercise programme. The length of time the client follows the DDAT programme varies, and the treatment comes to an end when a review assessment shows that the initial balance and co-ordination difficulties have been overcome. By the end of the one-year evaluation period of this project, in summer 2004, two of the eleven pupils taking part had completed the treatment, and several more were close to doing so.

The DDAT approach entails no attempt to assess or remediate any difficulties in reading or spelling directly.

Evaluation

The study analysed here was carried out with a group of 11 Y6–7 pupils in Isle of Anglesey and Gwynedd in 2003–04, with follow-ups in 2005 and 2006. The data-gathering appears to have been carried out by an educational psychologist employed

by one of the LAs. Reading and spelling were assessed in both Welsh and English, as part of a copious battery of tests, which also covered arithmetic, physical co-ordination, sports skills, short-term memory, processing of speech, and signs of dyslexia. The post-test results showed modest progress in reading in English, but little or none in spelling in English or in any of three tests of literacy in Welsh. Also, the progress in reading in English stalled after the programme: at the two follow-ups average scores on this were hardly different from the post-test.

Reference

Unpublished report supplied by Gareth Payne

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3.4 Dyfed Improving Reading Standards in Primary Schools Project

Dyfed Education Authority developed this project to examine the efficacy of thinking skills in helping to improve reading in Y1 children. In order to assess the transfer of thinking skills into the reading domain, a reading activity lasting 20 minutes was devised for the class teacher to deliver three times a week to a small group. The scheme was published in both Welsh and English, and consisted of an explanation of the approach, a set of booklets giving suggestions to children, and a video to complement the material.

Scheme

Dyfed recognised that the ability to think and solve problems is essential for full participation in the curriculum. The aim of this project was to evaluate the efficacy of early reading initiatives, based on thinking skills developed in the prevention of different reading difficulties, and incorporating aspects of the approach known as Philosophy for Children, which was devised by Matthew Lipman. 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 the Dyfed 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 Dyfed study comprised two approaches. One experimental group received both extra reading activities and the thinking skills programme, while the other received only the reading activities. A comparison group received no additional intervention. There were both Welsh- and English-medium versions of all three groups. Those receiving only extra reading activities were children identified as being at risk of reading difficulty.

In the reading sessions for the two experimental groups the class teacher delivered a reading activity lasting 20 minutes, three times a week, to a group of backward readers. The children read a short book together. After the initial reading pupils took it in turns to read. The other pupils were expected to follow the text being read by finger pointing. If a difficulty with a word was encountered the teacher encouraged the pupils to help each other tackle the problem.

Evaluation

The evaluation was carried out by Dyfed LA. The Dyfed Early Reading Check, which consisted of testing five developmental areas (language, learning style, memory, number, perceptual motor skills), was devised and administered to all pupils in order to identify areas of difficulty. The Reading Check was also used to evaluate the impact of the scheme. Six schools implemented thinking skills plus reading, and six others the 'extra reading only' approach. The progress made by pupils in the two intervention groups was similar, and not significantly better than the control group. However, all the groups were small, limiting the chances of detecting a statistically significant difference.

What appears to be the only other quantitative evaluation of Philosophy for Children in the UK was carried out in one secondary school in Derbyshire in 1992–93 (Williams, 1993). 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 was an intriguing 'bonus' effect.

References

Dyfed County Council (1994), Haynes (2002), Lipman (1981, 2003), Lipman *et al.* (1980), SAPERE (2002), Williams (1993).

3.5 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 (specifically the Ely area), 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 learnt.

Evaluation

A team at NFER was commissioned to evaluate the initiative in the four school terms from summer 1994 to summer 1995. 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 four standardised score points in reading (= modest progress), and the educational outlook for many of them was improved. At the 12-week follow-up, the summer and autumn 1994 cohorts had made

further relative gains, but not the spring and summer 1995 cohorts. At nine-month and 1997 follow-ups, the children had on average sustained their gains.

The evaluation also included assessments of the emergent or early writing of almost all the children in the study – 362 at the outset and, again, smaller numbers at the end of the courses and the 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)

(2) 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 three to six. In a further initiative in 1997–98, the Agency set up pilot programmes for linguistic minority families and for families with a child in Y4. These were again evaluated by a team from NFER. The adaptations for linguistic minority families and those with a child in Y4 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)

3.6 Reading Recovery

Reading Recovery arose out of an extensive research project carried out in New Zealand by Marie Clay. 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. Within schools which are thought to be in most need of the programme the children who are identified as being in the bottom 20 per cent 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.

But then in 2005 a consortium of charitable trusts and businesses provided £4.5 million over three years, matched by the (then) Department for Education and Skills, 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). Meanwhile, some LAs in Wales (e.g. Cardiff and Newport) had continued to support Reading Recovery, and in recent years the numbers of children receiving it appear to have been growing again.

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

Evaluations

For copious detail on Reading Recovery in England and generally across Britain and Ireland see Brooks (2007: 74–76, 108, 205–15, 266–67). Here attention is focused on data from Wales. The Reading Recovery centre at the Institute of Education, University of London, collects data from all Reading Recovery programmes in Britain and Ireland, and publishes annual reports. The data analysed for this report come from the annual report for Wales for 2006–07. The results show that on average children who had been 'successfully discontinued' from the programme had made remarkable progress, while those not discontinued had fallen slightly further behind.

None of the studies in Britain or Ireland has used a randomised controlled trial design. However, 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); National Data Evaluation Center at the Ohio State University (undated, but c.2007); What Works Clearinghouse (2007a, b)

3.7 STARS in Schools/STARS Cymraeg

Scheme

This is a balanced reading, writing, phonemic awareness and spelling programme designed for children with significant early literacy delay or difficulty. It was developed and introduced in English in 1998; the English version was revised, and a Welsh version developed and introduced, in 2004.

Children entering the STARS programmes at the beginning of Y2 or Y3 have been identified as having persistent difficulties with acquiring literacy. Following the recommended Cardiff Early Literacy Intervention Strategy, most of these pupils will have already been supported through Reading Recovery or other early intervention schemes. At exit or referral from those programmes they will still not be reading independently above Reading Recovery Book Band 2 or be able to write one or two understandable sentences on a familiar topic. They will have teacher assessments of reading and writing within the P-levels or possibly the bottom range of Level 1. A few will already have statements of SEN, others will usually be at SA+ or SA on the SEN Code of Practice. About 20% have English as an additional language, reflecting the diversity in Cardiff schools. A sizeable proportion would not be predicted to achieve outside P-levels at the end of KS1 without further focused small group or individual support.

Evaluation

The Cardiff team have been collecting data since the scheme was introduced in 1998. Full data were supplied for school year 2006–07, for 12 children in Welsh-medium schools and 65 in English-medium schools, all of which were part of the teacher professional development cohort for that year. On average, the Welsh-medium children made useful gains, the English-medium children modest ones.

Reference

Unpublished data supplied by Diana Le Cornu

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3.8 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 whilst 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, whilst 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. However, the major UK source for such evidence is the ‘Special Initiative to Enhance Literacy Skills in Bridgend’ conducted there with pupils in Y3–8 in 1998. Both reading and spelling were assessed. All groups, especially Y7–8, made useful to remarkable gains in reading, as did Y3 in spelling; Y7–8 made modest progress in spelling, but the other year groups made barely standard progress.

Reference

Matthews (1998)

Contact

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http://www.thrass.co.uk

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Appendix

Details of the evaluations

The central part of this Appendix is a log of the eight schemes, again in alphabetical order. Under each scheme are listed the salient statistical and related data used in the analysis in this report. Before the log, the abbreviations used are explained, and the organisation of the entries is described; and that description is followed by a number of notes of clarification, and by rules of thumb for interpreting ratio gains and effect sizes.

Abbreviations:	
BASWRT	British Ability Scales Word Reading Test
N	sample size
n/a	not applicable
r.a.	reading age
s.a.	spelling age
s.d.	standard deviation
RG	ratio gain

Introduction to the evaluation data

The entries below are organised in the order shown in Table 2.

Table 2: Organisation of entries in log of studies

	See note
Name of intervention	
Main reference(s)	
Research design	
Date when it was implemented	
Age-range of children involved, in school years (Y2, etc.)	
Type of children involved	1)
Number of pupils in experimental group	
Number of pupils in comparison group, where there was one	
For each group, number of schools, where known	
Whether groups were equivalent	
Length of intervention in weeks	
Reading and/or spelling test(s) or writing assessment used	

	See note
For each group (where known), pre- and post-test average scores, and units in which these are stated	2)
For each group (where known), difference between pre- and post-test average scores ('gain') in relevant units	3)
For each group, where scores are reading/spelling ages (r.a's/s.a's), ratio gain (RG), stated to one decimal place	
Effect size (where this was known or could be calculated), stated to two decimal places	
Statistical significance of differences between pre- and post-test scores, and between experimental and comparison groups, where known	
Summaries of starting and ending levels and progress	4)
Follow-up data, if any	

Notes to Table 2:

1) Type of children: categorised as one of
SEN – having special educational needs, including dyslexia
Low (reading and/or spelling or writing) attainment, which will in many cases include children with SEN

2) The units in which average scores and s.d's are stated are almost always either reading/ spelling ages or standardised scores. Raw scores have been used only in Family Literacy. Under Reading Recovery the KS1 data are given as percentages attaining the various levels.

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

4) 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
At secondary level only	9:0–11:0	likely to struggle with the secondary curriculum

Rules of thumb for interpreting ratio gains and effect sizes

These are provided to facilitate comparisons between schemes. Some levels of effect size do not occur in this report.

1. Ratio gains

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

2. Effect sizes

Above 0.80	=	Large impact, of substantial educational significance
Between 0.50 and 0.80	=	Medium impact, of useful educational significance
Between 0.25 and 0.50	=	Small impact, of modest educational significance
Between 0 and 0.25	=	Very small impact, of doubtful educational significance
Negative effect size	=	Comparison group made more progress than experimental group

1 Catch Up Literacy

(1) Primary

Main reference: Unpublished data supplied by Julie Lawes

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

Date: 2002–07

Age-range: Y2–6

Type of children: Low attainment

N of experimental group: Nearly 6,000 Y2–6 pupils in about 200 schools in six LAs (Caerphilly, Denbighshire, Flintshire, Merthyr Tydfil, Rhondda Cynon Taf, Vale of Glamorgan)

N of comparison group: (No comparison group)

Length of intervention in weeks: 36 (nine months used in calculating ratio gains)

Reading tests: NFER Group Reading Test 6–14, Salford Sentence Reading Test (Revised); also All Wales Test for Welsh-medium

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

Average gain in reading comprehension in months of r.a. (s.d. not stated), and ratio gain:

Gain	RG
20	2.3

Effect size: n/a

Statistical significance: Was 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 useful progress.

Follow-up: (No follow-up)

1 Catch Up Literacy

(2) KS3

Main reference: Unpublished data supplied by Julie Lawes

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

Date: 2005–07

Age-range: Y3

Type of children: Low attainment

N of experimental group: 175 in 13 schools in two LAs (Rhondda Cynon Taf, Vale of Glamorgan)

N of comparison group: (No comparison group)

Length of intervention in weeks: 34 (average; eight months used in calculating RG)

Reading tests: Hodder/Murray DRA, NFER Group Reading Test 6–14

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

Average gain in reading comprehension in months of r.a. (s.d. not stated), and ratio gain:

Gain	RG
19	2.4

Effect size: n/a

Statistical significance: Was 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 useful progress.

Follow-up: (No follow-up)

2 Llythrennedd Dyfal Donc

(1) Primary

Main reference: Kenyon (2008)

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

Date: 2007–08

Age-range: Y2–6

Type of children: Low attainment

N of experimental group: 32 in eight schools in Carmarthen

N of comparison group: (No comparison group)

Length of intervention in weeks: 22 (average; five months used in calculating RG)

Reading and spelling test: All Wales Test

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.d. not stated) and ratio gain:

Gain	RG
13	2.6

Effect size: n/a

Statistical significance: Was 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 RG shows useful progress.

Follow-up: (No follow-up)

2 Llythrennedd Dyfal Donc

(2) KS3

Main reference: Unpublished data supplied by Julie Lawes

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

Date: 2005–07

Age-range: Y7

Type of children: Low attainment

N of experimental group: 24 in one school in Flintshire

N of comparison group: (No comparison group)

Length of intervention in weeks: 39 (nine months used in calculating RGs)

Reading and spelling test: All Wales Test

Pre- and post-test average r.a's in years and months, s.a's in years and decimal years (s.d's not stated), gains in months of r.a./s.a., and ratio gains:

	Pre	Post	Gain	RG
Reading	9:1	11:3	26	2.9
Spelling	10.0	11.3	16	1.7

Effect sizes: n/a

Statistical significances: Were not stated and could not be calculated

Starting and ending levels and progress: The pre-test scores in both skills suggest these pupils would be struggling with the secondary curriculum. The post-test scores suggest that they would be rather better able to cope. The RGs show useful progress in reading, modest progress in spelling.

Follow-up: (No follow-up)

3 DDAT/Dore

Main reference: Unpublished report supplied by Gareth Payne

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

Date: 2003–04

Age-range: Y6–7

Type of children: SEN – severely dyslexic

N of experimental group: 11

N of comparison group: (No comparison group)

Length of intervention in weeks: 52

Reading test: BASWRT (Other tests were given – BAS Spelling, and prose passages test, questions on content and spelling test from Profion Glannau Menai – but are not reported in sufficient detail to analyse)

Pre- and post-test and one-year and two-year average r.a's and s.d's in years and months, average gain score and s.d. for reading accuracy in months of r.a., and ratio gain pre/ post:

	Pre	Post	Gain	RG	One-year follow-up	Two-year follow-up
Ave.	7:1	8:11	21	1.8	9:3	9:1
(s.d.)	(0:9)	(1:6)	(13)	(2:1)	(1:10)	

Effect size: n/a

Statistical significance pre/post: $p<0.001$ (as calculated by GB)

Starting and ending levels and progress: The pre- and post-test average scores were in the semi-literate range. The RG shows modest progress between pre- and post-test, but the English spelling and Welsh test data in the report show less progress. The fact that the standard deviation increased substantially from pre- to post-test (and again to first follow-up) means that some pupils were making good progress while others were standing still.

Follow-ups: Nine pupils were followed up after one year, and nine after two years, including eight of those followed up after one year. For the data, see above. The two follow-up averages show that these pupils (all by now in secondary schools) had made little or no further progress after the programme, and would still struggle with the secondary curriculum.

4 Dyfed Improving Reading Standards in Primary Schools Project

Main reference: Dyfed County Council (1994)

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

Date: 1993–94

Age-range: Y1

Type of children: Low attainment (screened on Bury Infant Check and Dyfed Early Reading Check, and failed to score on Suffolk reading test at pre-test)

Ns of experimental groups: (1, thinking skills plus extra reading)
21 (11 Welsh-speaking, 10 English-speaking)
(2, extra reading only)
30 (16 Welsh-speaking, 14 English-speaking)

N of comparison group: 22 (14 Welsh-speaking, 8 English-speaking)

Equivalence of groups: Children most in need were chosen for experimental groups; controls were other children in same schools, but not matched

Length of intervention in weeks: 38

Reading tests: Prawf Darllen Clwyd, BASWRT

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

Gains in months of r.a., and ratio gains:

	Welsh-speaking		English-speaking	
	Gain	RG	Gain	RG
Experimental group 1	14	1.6	17	1.9
Experimental group 2	14	1.6	13	1.4
Comparison group	15	1.7	8	0.9

Effect size: n/a

Statistical significances: All differences in gain between experimental and comparison groups were said to be non-significant. This may have been due to the very small samples.

Starting and ending levels and progress: The absence of pre- and post-test scores does not permit characterisation of starting and ending levels. The English-speaking comparison group made just about standard progress. The other groups made modest progress.

Follow-up: (No follow-up)

5 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 (one cohort of children in each term)

Age-range: Nursery to Y2 (ages 3–6); writing data on all children, but reading data only on those in Y1–2 (ages 5 and 6)

Type of children: Low attainment

N of experimental group: Total 392, but reading data for 147 and writing data on 362, 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)

Length of intervention in weeks: 12

A. Reading data

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, nine-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 Post-test	147	84.1 88.5	(17.0) (17.9)	4.4	0.29
Pre-test vs 12-week follow-up	101	85.6 92.4	(17.6) (17.5)	6.8	
Pre-test vs Nine-month follow-up	67	84.2 90.3	(16.2) (18.1)	6.1	
Pre-test vs Long-term follow-up	107	89.6 93.6	(11.5) (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 nine-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 three months following the programme, and sustained two and a half to three years later.

B. Writing data

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, nine-month and long-term follow-ups, and gains from pre-test:

	N	Average score	(s.d.)	Gain
Pre-test vs Post-test	279	3.5 4.1	(1.6) (1.7)	0.6
Pre-test vs 12-week follow-up	179	3.7 4.6	(1.6) (1.4)	0.9
Pre-test vs Nine-month follow-up	91	4.0 5.4	(1.5) (1.3)	1.4
Pre-test vs Long-term follow-up	175	3.4 8.0	(1.6) (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-ups: See above

5 Family Literacy

(2) 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)

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	10.8	0.72
(s.d.)	(16.9)	(14.8)		
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)

6 Reading Recovery

Main reference: National Data Evaluation Center at the Ohio State University (undated, but c.2007)

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

Date: 2006–07

Age-range: Y1–2

Type of children: Low attainment

N of experimental group: 180 in an unknown number of schools in Wales

N of comparison group: (No comparison group)

Length of intervention in weeks: Not stated, but other Reading Recovery documentation suggests 18.5 on average (4.5 months used in calculating RG)

Literacy test 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:

	N	Pre	Post	Gain	RG
Children 'successfully discontinued'	147	4:10	6:7	21	4.7
Children referred (not discontinued)	33	4:10	5:1	3	0.7
Overall	180	4:10	6:4	18	4.0

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 for the 'successfully discontinued' children puts them close to the threshold of functional literacy, while those not discontinued were still effectively non-readers. The RGs show that on average the 'successfully discontinued' children had made remarkable progress, while those not discontinued had fallen slightly further behind.

Follow-up: Varying numbers of these children were followed up three and six months after leaving Reading Recovery and at the end of KS1. The average BASWRT r.a's at post-test (discontinuation or referral) and three- and six-month follow-ups were:

	Discontinued children		Referred children	
Stage	N	BASWRT r.a.	N	BASWRT r.a.
Post-test	147	6:7	33	5:1
Three-month follow-up	70	6:10	28	5:1
Six-month follow-up	24	6:10	28	5:1

Though the sample sizes fall off steeply, the BASWRT data for discontinued children show exactly standard progress, one month of r.a. gained for each month elapsed, in the first three months, but a plateau in the next three months. In other words, having returned to their classes, those children who could be traced and assessed were on average keeping up with their peers to start with, though perhaps not in the next period. Meanwhile, the referred children had made no progress, and were therefore falling further and further behind.

KS1 reading and writing results were gathered for 160 children, and were as follows:

Reading		Discontinued children		Referred children		Overall	
	Level	N	%	N	%	N	%
	3	5	4	0	0	5	3
	2	107	83	6	19	113	71
	1	17	13	16	52	33	21
	W	0	0	9	29	9	6
	Total	129	100	31	100	160	100
Writing		Discontinued children		Referred children		Overall	
	Level	N	%	N	%	N	%
	3	2	2	0	0	2	1
	2	105	81	9	29	114	71
	1	22	17	16	52	38	24
	W	0	0	6	19	6	4
	Total	129	100	31	100	160	100

The percentage achieving below level 2 overall in English was 28%, compared to the national figure of 19%*, 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.

*www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=4133&IF_Language=isl

7 STARS in Schools/STARS Cymraeg

Main reference: Unpublished data supplied by Diana Le Cornu

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

Date: 2006–07

Age-range: Y2–3

Type of children: SEN/ALN (Additional Learning Need)/Low Attainment (P4-1C (TA) in reading and/or writing, generally after earlier stage intervention SAIL/Reading Recovery)

N of experimental group: Welsh-medium: 12 in three schools
English-medium: 65 in 18 schools

N of comparison group: (No comparison group)

Length of intervention in weeks: 30 (seven months used in calculating ratio gains)

Reading and spelling tests: Welsh-medium: Profion Glannau Menai
English-medium: Salford Sentence Reading Revised, Young's Parallel Spelling

Pre- and post-test average r.a's and s.d's in years and months, pre- and post-test average s.a's and s.d's in years and decimal years, gains in reading comprehension and spelling and s.d's in months of r.a./s.a., and ratio gains:

	Pre		Post		Gain		RG
Welsh-medium							
Reading	5:1	(0:9)	6:10	(0:10)	19	(10)	2.7
Spelling	4.9	(0.7)	6.3	(0.6)	16	(11)	2.3
English-medium							
Reading	4:3	(0:2)	5:3	(0:10)	12	(10)	1.8
Spelling	6.1	(0.3)	6.8	(0.4)	9	(5)	1.3

Effect sizes: n/a

Statistical significances: Were not stated and could not be calculated

Starting and ending levels and progress: At pre-test, on average the Welsh-medium children were non-spellers, and not yet functionally literate in reading; the English-medium children were non-readers, and not yet functionally literate in spelling. At post-test, all scores in reading and spelling were still not yet in the functionally literate range, but the Welsh-medium children had made useful progress in both and the English-medium children modest progress in both.

Follow-up: (No follow-up)

8 THRASS

Main reference: Matthews (1998)

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

Date: 1998

Age-range: Y3–8

Type of children: Low attainment

N of experimental group: 160 in eight schools in Bridgend (for year groups, see below)

N of comparison group: (No comparison 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
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-test scores does not permit characterisation of starting and ending levels. All groups, especially Y7–8, made useful to remarkable gains in reading (both aspects), as did Y3 in spelling; Y7–8 made modest progress in spelling, but the other year groups made barely standard progress.

Follow-up: (No follow-up)

What works for pupils in Wales with literacy difficulties?

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