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Research for Teachers

Teaching phonics effectively

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There has been widespread controversy over the years about the best way to teach children reading and spelling.

Should they be taught using the letter sounds (phonics), by learning whole words, or by both? If they are taught using phonics what is the most effective way to do so?
To help teachers find their way around the issue of phonics teaching this TLA research summary aims to highlight key features of phonics approaches in the context of literacy learning in England. We use the Rose report as the basis for the summary. This report was undertaken in the context of existing early literacy practices, including phonics, within the National Literacy Strategy in schools in England.

The Rose review examined:

- best practice in the teaching of early reading and phonics
- the kind of provision that best supports children with significant literacy difficulties and enables them to catch up with their peers
- how leadership and management in schools can support the teaching of reading.

The review concentrated on provision and practice up to the end of Key Stage 1. It found that the systematic learning of phonics was crucial to raising standards, with early interventions to prevent children from falling behind. Rose concluded that schools in England often already have good material resources for teaching reading, including phonic work. Consequently, the review's recommendations are largely to do with improving the quality of what is already in place rather than introducing new elements.

We believe that teachers and school leaders will find the exploration of phonics in the summary helpful in providing them with pointers to how they can build on the existing literacy practice in their own schools. Linked to the summary are a number of case studies we have chosen to illustrate some of the ways teachers are using phonics to enhance their pupils' literacy skills.

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Overview

Why is the issue important?
There has been widespread controversy over the years about the best way to teach children reading and spelling. More recently, the debate has focused on phonics teaching, and in particular, synthetic phonics. As recommended by the Rose review, all teachers in England are now expected to teach synthetic phonics as the first and main strategy for reading. The approach replaces the searchlights multi-cueing model advocated by the 1998 National Literacy Strategy. It is important therefore that practitioners are clear about what the Rose review recommendations were exactly, and the evidence base underpinning them.

What did the review show?
The review found that the main ingredients for success in the teaching of beginner readers were:

- well-designed phonics programmes that are taught discretely and systematically for short periods of time
- additional support for those struggling with literacy that is compatible with mainstream practice
- effective assessment
- well-trained teachers and teaching assistants, and supportive leadership.

The review found much convincing evidence to show that 'synthetic' phonics was the form of systematic phonic work that offered the vast majority of beginners the best route to becoming skilled readers and made a convincing case for the inadequacy of the existing 'searchlights' model for beginner readers.

How was this achieved?
Synthetic phonics is a very accelerated form of phonics - children are taught all letter sounds, including blends (eg. 'bl', 'cr', 'st') and digraphs (eg. 'oo', 'ch') in the first few months of school. Children are shown letters in all positions from the start and are taught to read and spell simultaneously.

The review noted that once begun, high quality phonic programmes need to be followed consistently and carefully, with each day reinforcing and building on previous learning to secure children's progress. The best teaching seen during the review:

- was at a brisk pace
- fired the children's interest, often by engaging them in multisensory activities, and
- made sure that they received praise for their efforts and achievement.

How was the research designed to be trustworthy?
The Rose review drew on a wide range of evidence, including:

- research on the teaching of reading and other aspects of literacy

- written evidence and oral accounts of effective practice from acknowledged experts in the field
- Ofsted reports
- visits by the review team to projects where good achievement in reading was related to a particular phonic programme.

What are the implications?
Teachers involved in the teaching of reading should:

- be able to plan and implement a high-quality phonics programme
- use multi-sensory activities and a mix of resources including ICT within phonics sessions
- praise and encourage achievement at every opportunity
- judge how to organise teaching groups to provide optimum conditions for learning
- monitor children's progress through careful observation and robust assessment.

What do the case studies illustrate?
The case studies illustrate:

- a multisensory approach for supporting phonics teaching and learning
- peer-coaching between pupils as a way of helping them to develop and apply their knowledge of sounds within words
- the role of trained teaching assistants in enhancing children's phonological skills
- an effective approach to teachers' professional development in literacy teaching and learning.

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Study

What were the main findings of the review?
The review found that the main ingredients for success in the teaching of beginner readers were:

- well-designed phonics programmes that are taught discretely and systematically for short periods of time
- additional support for those struggling with literacy that is compatible with mainstream practice
- measures that ensure gains made by children through intervention programmes are sustained after the end of the programme
- effective assessment
- well-trained teachers and teaching assistants, and supportive leadership.

We discuss teacher support and development in relation to phonics teaching and learning later in the RfT. You might find it helpful to read a case study which highlights the key part played by teacher development in literacy learning.

What did the review mean by systematic phonics teaching?
The review found much convincing evidence to show that 'synthetic' phonics was the form of systematic phonic work that offered the vast majority of beginners the best route to becoming skilled readers. Among its strengths is that it teaches children directly what they need to know, whereas other approaches, such as 'analytic' phonics, expect children to deduce them.

The synthetic approach teaches beginner readers:

- grapheme/phoneme (letter/sound) correspondences in a clearly defined, incremental sequence
- to apply the skill of blending phonemes (sounds) in order, all through a word to read it
- to apply the skills of segmenting words into their constituent phonemes to spell
- that blending and segmenting are reversible processes.

The review used the term 'high quality phonic work' when referring to this approach. The evidence

considered by the review indicated that it involves teaching phonics discretely and intensively. This is because successful phonic work for word recognition is a time-limited activity that is eventually overtaken by work that develops comprehension.

One way of teaching phonics discretely and intensively is through using computer software. Practitioners may like to read a case study which shows the value of using a computer for enhancing children's phonological skills. In the study, the computer software facilitated by the teacher had a greater impact on the children's phonological skills than using worksheets did.

We explore what the review meant by synthetic phonics and high quality phonic work in more detail in the following sections.

What are the key features of synthetic phonics?
There have been many references in the press and media to synthetic phonics. So what is the difference between existing (analytical) phonics methods and the much talked about synthetic phonics?

Synthetic phonics
Synthetic phonics is a very accelerated form of phonics - children are taught all letter sounds, including blends (such as 'bl', 'cr', 'st') and digraphs (a digraph is a pair of letters used to write a sound that does not correspond to a blending of the individual letter sounds, such as 'oo', 'ch') in the first few months of school. Children are shown letters in all positions from the start and are taught to read and spell simultaneously.

Briefly, children learn synthetic phonics in the following sequence:

- initially, children are taught a few sounds, /t/ /p/ /a/ /i/ and /s/ (this is the smallest group of letters that allow children to build the greatest number of words)
- the children are then shown how these sounds can be blended together to build up words. For example, the sounds/t/ /p/ /a/ and /s/ can be built into the words 'tap', 'pat', 'taps', 'a tap' etc.
- the children are not told how to pronounce new words, they construct the pronunciation for themselves - they sound each letter out, then synthesise the sounds together
- as most of the letter sound correspondences, including the consonant-vowel-consonant (CVC) sounds are taught in the first few months of school, the children can read many unfamiliar words they meet in a text for themselves, without the assistance of the teacher.

Analytic phonics
With the analytic phonics approach, children learn letter sounds in a sequence (initial, final, then the middle position), followed by blends and digraphs. Reading is taught before spelling. The full phonics scheme is not usually completed until the end of the third year at school.

Briefly, children learn phonics in the following sequence:

- children are typically taught one letter sound per week. To teach the letter sounds, whole words sharing a common initial letter sound are presented, such as 'milk', man', 'mother', and attention is drawn to the initial sound
- when all 26 initial letter sounds have been taught in this way, children are introduced to final sounds, then the middle sounds in CVC words such as 'cat', 'bag' etc. Children may be taught to sound and blend CVC words, for example 'cuh-ah-tuh' for 'cat'
- in the second year of school, children are taught initial consonant blends, eg. 'bl', 'cr', 'sp' followed by final consonant blends, such as 'nt', 'ng', 'st'
- in the third year of school, vowel and consonant digraphs are introduced, for example 'ee', 'oo', 'ch', 'sh' and silent 'e', such as 'slate'.

What did the review mean by high quality, systematic phonics teaching?
The review argued for a vigorous programme of phonic work within a broad and language-rich curriculum. It noted that once begun, high quality phonic programmes need to be followed consistently and carefully, with

each day reinforcing and building on previous learning to secure children's progress. It included a variety of related activities that advanced learning incrementally and appealed to children. Time spent on this daily work was usually short (around 20 minutes) but well planned. The best teaching seen during the review was:

- at a brisk pace
- fired the children's interest, often by engaging them in multisensory activities, and
- made sure that they received praise for their efforts and achievement.

What did multisensory work involve?
Multisensory activities featured strongly in high quality phonic work. It encompassed visual, auditory and kinaesthetic activities involving, for example:

- physical movement to copy letter shapes and sounds
- manipulating magnetic or other solid letters to build words
- mnemonics, such as a picture of a snake or an apple in the shapes of 's' and 'a' to help children memorise letters.

The multisensory work showed how children generally bring as many of their senses as they can to the learning task. Practitioners may like to read a case study which shows how teachers used a multisensory approach that involved PowerPoint computer presentations to teach basic phonics rules to their Year 2 and Year 3 children. The case study also shows the importance of teaching related phonics rules sequentially within a short time frame.

Less effective phonics teaching
The review gave two examples of weak phonics teaching. The first example shows the importance of enunciating phonemes correctly, and understanding why it is important. The second is an example of a general weakness that would reduce learning of any work.

Example 1
When sounding out (segmenting) words such as 'cat' and 'bat', the teacher frequently stretched the consonants, for example, by adding the sound 'ur'. What the children heard was 'cur-a-tur' and 'bur-a-tur' which caused them to find blending (synthesising) the sounds (phonemes) for 'cat' and 'bat' unnecessarily difficult.

Example 2
The whole class was seated on the carpeted area around the teacher who sat on a chair next to the whiteboard. The children were asked to sound out, blend and read words such as 'pin' and 'tin' that the teacher wrote on the board. Two difficulties for the children were apparent. First, the writing was too small and indistinct because it was written in a yellow marker pen. Second, those children at the front constantly obscured the view of the children sitting at the back of the group, including two boys later identified as struggling readers.

Did the review favour a particular phonics programme?
The review highlighted how there are many commercially produced phonic programmes with assessment data that show substantial, even spectacular gains in the performance of beginner readers on their programme. The review was unable to compare the value added by each programme because they used a wide array of different tests. It considered that what was of greater importance was that all the programmes were highly systematic in their approach.

The review also noted how 'fidelity to the programme' was important for ensuring children's progress. The review commented that even high quality programmes can flounder if they are not applied consistently and regularly. It advised that it is unwise to 'pick and mix' too many elements from several different programmes because this is likely to break up important sequences of work and disrupt planned progression.
Teaching letter names

The review commented on how the teaching of letter names is often left until after the sounds of letters have

been learned, in the belief that it can be confusing for children to have to learn both together. But, the review commented that research shows how children often learn the letter names before they learn the sounds and that five year olds who know more letter names also know more letter sounds, although the reasons for this phenomenon are not clear. The review argued that it makes sense to teach children letter names within the programme of early phonic work because:

- they will meet letter names outside of school
- most children understand the distinction between a letter name and a letter sound quite easily
- children may find the letter names easier to learn because they expect things to have names and are accustomed to rapidly acquiring the names of things.

What did the review say about the use of reading scheme and real books?
Whilst some supporters of synthetic phonics introduce letters to children before they are introduced to books, the review does not take this line. The review suggested that as they learn to master the alphabetic code, children can benefit from reading material that is well within their reach in the form of decodable books - that is, early reading books specially designed to incorporate regular text which children can decode using the phonic skills they have secured. This enables them to achieve 'quick wins' in practising phonic skills and so gain confidence from reading a whole, albeit short book. The review strongly advocates that children are consistently engaged with good quality books from pre-school onwards and urges parents to back this at home from children's earliest years.

The review suggested that using specially written decodable books as part of a phonic programme does not preclude other reading. It argued that much turns on the quality of the decodable books which are available and highlighted how the quality of such books has improved greatly - many are attractively designed and some are written by established, highly regarded authors. It is also the case that the simple text in some recognised favourite children's books can fulfil much the same function as that of decodable books. One study, for example suggested that:

'Many books written for young children have a high degree of repetition anyway, above and beyond high frequency words. Furthermore, the vast choice of available books will potentially contribute to them developing and extending their vocabularies and general knowledge'.

So, the review suggested that it is possible to use these real books in parallel, or as an alternative to 'reading scheme', decodable books. The review was clear that decodable books should not deny children access to favourite books and stories at any stage, and particularly at the point when they need to read avidly to hone their skills, as the focus shifts from learning to read, to reading to learn.

Why is assessment and early intervention so important?
The review commented that effective assessment should track performance in all four strands of language (speaking, listening, reading and writing), and identify strengths and weakness in children's knowledge, skills and understanding, especially those related to mastering word recognition skills. It identified the following key areas for assessment:

- recognition of letters and groups of letters, such as digraphs (eg. 'oo' and 'ch')
- the ability to sound out phonemes (sounds)
- the ability to hear and blend phonemes
- the reading of phonically regular words
- the reading of some irregular words.

The review noted how in effective settings, teaching was adapted to take account of the outcomes of the assessment. The review stressed that assessment during the Foundation Stage should take account of well-informed observations of children's early language development, including pre-reading differences that may be associated with language delay for which planned support is needed.

The report described how a school which had a predominately Asian population (and where nearly 70% of the pupils did not have English as their first language) approached assessment and intervention:

'In the afternoon, any children who need extra help are taught in very small groups or one-to-one for short periods. The support is provided by teaching assistants who have been trained with this specifically in mind. This does not involve new material - it concentrates on blending skills and follows the programme. Children who are not coping in their reading groups will be moved to the one below - this is not a problem and is never referred to as 'going down'. The managers of the programme monitor the progress of every child and are quick to spot problems as they arise'.

The school's data showed a large increase in the proportion of children learning to read at Key Stage 1, with far fewer working towards or achieving only level 1 in reading. This example also indicated how systematic, high quality teaching, detailed assessment and early intervention are as important for learners of English as an additional language as for other children.

Practitioners may like to read a case study which shows how a teacher in a multicultural primary school first assessed her children's spelling, then used the information to help her pair up more able with a less able spellers to help her class learn the spelling of sounds within words and find strategies which they could use for when they were unsure of how to spell a word.

How can school resources be deployed to support interventions for weak readers?
The review recommended that after poor readers have been assessed for medical conditions such as hearing and sight problems that can easily be corrected, intervention should follow the three 'waves' of teaching and intervention recommended in the Primary National Strategy:

Wave 1 - the effective inclusion of all children in daily literacy lessons that not only involve teaching and learning but careful monitoring of children
Wave 2 - additional interventions to enable children to work at age related expectations or above
Wave 3 - additional, highly personalised interventions, for example, specifically targeted approaches for children identified as requiring SEN support.

Schools in the review had created different kinds of arrangements, most of them involving TAs, for intervening at key stage 1, including:

- support from trained teaching assistants (TAs) for small groups within class lessons
- work with a trained TA, in a small group, outside the class
- one-to-one daily reading sessions with a trained TA
- use of the Primary National Strategy Early Literacy Support programme in Year 1 and/or, additional literacy support in Year 2, taught by trained TAs
- providing selected children with 10 minutes of additional work on letter-sound correspondences with a trained TA
- a 20-minute group session with the special educational needs coordinator, focusing on phonic knowledge and skills, and on applying these to reading and writing
- grouping children for phonic work, moving them between groups depending on their progress
- guidance for parents on how to help their children at home.

The report stressed that additional intervention work should focus on the phonic skills that children have already met in their mainstream classes. It should aim to provide the children with more help and time from skilled adults to strengthen and secure those aspects they had not first understood.

A significant feature of much of the intervention work was that it was undertaken by TAs who had usually undergone appropriate training. They worked not only alongside teachers in regular classes, but also with small groups or individual children. Practitioners may like to read a case study which shows the valuable role trained TAs can play in enhancing young children's phonological skills.

Practitioners may also like to read case study 2 in our earlier RfT Inclusion and pupil achievement which showed how teaching assistants were trained to deliver an intervention strategy that helped improve six-year-old children's reading and spelling performance.

What support do teachers need to teach phonics effectively?
The review made it clear that the purpose of phonic work was to enable children to learn to read and write independently, and that it should aim to ensure that they gained the necessary knowledge and skills efficiently and quickly.

Effective training was characterised by:

- clear principles which underpinned the content, sequence and pace of phonic work
- straightforward, well structured presentation of the phonic knowledge, skills and understanding children need to learn
- understanding of the relationship between phonic work and comprehension
- guidance on how to teach irregular words
- guidance on regular assessment of phonic knowledge, skills and understanding and using the information gained to improve teaching and learning
- stressing the need for teachers to pay attention to children's speaking and listening skills, including during phonic work itself
- multisensory approaches.

The best training also highlighted the importance of effective classroom practice being supported by school-wide commitment to teaching phonic work systematically and effective leadership and management by senior staff, including monitoring teaching to make sure that the intended outcomes of the training were being achieved.

The review gave the example of a head teacher in one school who, following a course of synthetic phonics training, undertook a minimum of 10 short observations each week. He was convinced that this level of personal intervention kept the programme 'on track' and was effective in ensuring that pupils made good progress. He felt that such monitoring 'ensures that they stick to the agreed, whole school programme'. The impact was, in his words, a 'staggering difference' in the pupils' ability to read. The school's Key Stage 1 test results improved markedly and it became one of the most highly attaining schools in the authority, yet with one of the most diverse populations.

The report also reflected the belief that continuing professional development (CPD) should support reading and writing across the curriculum, as well as deepening the expertise of those directly responsible for beginner readers.

Practitioners may like to read a case study that shows how a group of teachers undertook CPD that helped their teaching and their pupils' learning of spelling.

What's wrong with the existing 'searchlights' approach?
A highlight of the report is the way it dealt with the relationship between decoding and comprehension and, in the process, revealed weaknesses in the 'searchlights' model (the focus of the National Literacy Strategy). This model depicts reading development as involving a continuous increase in the child's ability to apply and orchestrate four different 'cueing systems' (searchlights) - see diagram. It was founded on a view of what constitutes a 'skilled reader' and the processes which support a child moving to such a position. The traditional searchlights model is usually represented by a diagram like this:

*******[diagram of searchlights approach]*******

However, the report argued that the searchlights model does not best reflect how a beginner reader progresses to become a skilled reader. The model puts all four 'cueing' systems on an equal footing, whereas in reality, according to the report, skilled readers do not need to use all the cueing strategies to read words, as they have

already developed the skill of word recognition. They may use knowledge of context and grammar, which are conceived within the searchlights model, to assist their understanding of the text, but they would still be able to decode the words without them.

The searchlight model, in the report's view, risks paying insufficient attention to the critical skills of word recognition which must first be secured by beginner readers. Where beginner readers are taught mainly to infer a word from pictures they are less likely to apply their developing phonic knowledge and skills to print. During the course of compiling the review, several examples were seen of beginners being encouraged to infer from pictures words they did not immediately recognise from the text. This was often done well before they had sufficient time to decode the word and, if necessary retry after their first attempt.

What view of reading underpins the review?
The review takes the view that the goal of reading is comprehension and phonics work is a means to this end. The review author believes that the simple view of reading presented in diagram form below provides a conceptual framework for practitioners and researchers:

*******[diagram of reading approach]*******

Whilst the language comprehension and word recognition processes are linked teachers can treat them as separable, continuous processes that may require them to use different approaches for individual children. Phonics (decoding and encoding) should be the main, albeit time-limited approach to securing word-recognition. Language comprehension should be supported through all four strands of language development - speaking, listening, reading and writing.

The report discussed two specific groups of early reader with different needs. One group consists of children with good levels of comprehension but weak word recognition who would benefit from opportunities to consolidate their phonic knowledge and to apply that it in practice. The other group is made up of children with strong word recognition skills but poor comprehension who need to focus on meaning. The second type of early reader may have English as an additional language. The necessary support could be provided through additional intervention work.

What evidence was the review based on?
The review drew on a wide range of evidence, including:

- research on the teaching of reading and other aspects of literacy
- written evidence and oral accounts of effective practice from acknowledged experts in the field
- papers submitted to the Education and Skills Committee report, 'Teaching children to read'
- a small scale survey by Her Majesty's Inspectors of Schools, involving school visits
- Ofsted reports
- visits by the review team to projects where good achievement in reading was related to a particular phonic programme
- early findings from the Primary National Strategy Early Reading Development Pilot
- responses to the review's website

Where did the evidence for synthetic phonics come from?
The evidence came from a widely reported seven-year longitudinal study from Clackmannanshire in Scotland. This study involved 13 classes of pupils aged five years (around 300 children) from eight schools. Teachers taught pupils (aged 5 years) using one of these three interventions:

- four classes were taught using an analytic phonics approach
- four classes followed an analytic phonics approach supplemented with phonological awareness
- five classes received the synthetic phonics approach.

The programmes lasted for 16 weeks, for 20 minutes a day during whole class lessons. The researchers assessed the pupils before and after the intervention and compared their literacy skills using standard tests. The researchers found the following gains for the synthetic phonics group:

- word reading was seven months ahead of the analytic phonic groups and also seven months ahead of chronological age
- spelling was eight to nine months ahead of the other two groups and 7 months ahead of chronological age.

These improvements were maintained to the end of year P7 (aged 11-12 years). Members of the review team visited Clackmannanshire in mid-September 2005 in order to see the approach in action for themselves.

Implications for practice
Teachers may like to consider the following implications of the findings of this research:

The literacy initiatives described in the report involved a fast paced structured curriculum based on direct teaching of letter sounds and short, stimulating and multisensory activities. Could you work with other teachers and teaching assistants to develop a menu of such activities further to enrich pupils' understanding and use of language?
The report suggested that early on, new readers will be focused on the application of phonic skills and word recognition, but as they grow in confidence and skill, the emphasis will shift to comprehension. Does your monitoring system enable you to chart and respond to these changing needs?

The report discussed two specific groups of early reader - children who have good levels of comprehension but weak word recognition, and children with strong word recognition skills but poor comprehension. Could you work with colleagues to create activities that support the different needs of these two groups to enable the children in the first to consolidate their phonic knowledge and to apply that knowledge in practice and to support those in the second group in focusing on meaning?

A key activity described in the report is providing children with rich opportunities for increasing their stock of words and applying their acquired decoding skills in context. Would shared reading involving an older child be a helpful strategy for supporting early readers in tackling unfamiliar texts? Could you work with a colleague to set up and implement paired reading activities?

Leaders may like to consider the following implications:
The report highlighted the importance of headteachers and literacy leaders auditing the practice and provision for reading in their schools, in regular and short observations, in order to maintain quality and consistency of phonic work and provide staff with constructive feedback. Do your processes involve similar modeling of interest and enable staff to learn from their experience and to amend their practice in effective ways in the light of evidence from such observations?

Effective teaching and learning using phonics was observed when the phonic work was given appropriate priority in the teaching of beginner readers and supported by appropriate training and professional development for staff. What CPD opportunities do you offer to literacy teachers and teaching assistants in your school? Could you plan for CPD aimed specifically at supporting your staff's acquisition of the skills and knowledge they need to implement phonics programmes effectively?

The report suggests that when parents and carers are informed about the approach to reading being undertaken by their children they can provide further support at home which complements the children's learning in school. Other evidence (see Further Reading) suggests that this is most effective when out of school activities involve adults and children interacting and having conversations about the children's learning. Could you make involving parents and carers in discussing the development of early reading with their children an item for school development and ask subject or year teams to devise pilot activities for sharing with other staff?

A consistent feature of effective teaching and learning through phonics identified in the report was the involvement of TAs in providing targeted and swift support for pupils who were falling behind in their early reading. Are there opportunities in your school for training and support of TAs in developing good working

relationships with literacy teachers so they can provide support to pupils at the appropriate times?

Filling in the gaps
Gaps that are uncovered in a piece of research have a useful role in making sure that future research builds cumulatively on what is known. But research also needs to inform practice, so practitioners' interpretation of the gaps and follow-up questions are crucial. We think three kinds of studies would usefully supplement the research we have reported on:

- longitudinal studies designed to gather evidence of specific phonics strategies over a number of years and with different age groups
- comparative studies of different phonics strategies, and
- case studies of teachers using phonics approaches to introduce and then provide catch-up help for phonics skills in their classrooms.

What is your experience?
Do you have any evidence about phonics teaching and learning in your own school or classroom? We would be interested to hear about examples of effective phonics work, which we could perhaps feature in our case study section.

Your feedback
Have you found this study to be useful? Have you used any aspect of this research in your own classroom teaching practice? We would like to hear your feedback on this study. To share your views with us please email: research@gtce.org.uk

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Case studies

We present five case studies to illustrate aspects of the research reported in the RfT. The first case study describes and explores the impact of teachers' professional development in word structure. The next two case studies illustrate how teachers used ICT and a multisensory approach, respectively, to support phonics teaching and learning. In the fourth case study a teacher engaged pupils in supporting each other in developing and applying their knowledge of sounds within words to help them to spell unfamiliar words. We chose the fifth case study because it illustrates the role of trained teaching assistants in enhancing children's phonological skills.

Teachers' specific awareness of key concepts in literacy at Key Stage 2

We chose this case study because it illustrates an approach to teachers' professional development in literacy teaching and learning. Whilst the focus of the study is morphology and comprehension and not phonics specifically, it reinforces the idea that teachers' explicit understanding of key concepts will promote children's progress in literacy. A morpheme is the smallest part of a word that carries meaning, so it can be a whole word, like 'cat' or just part of a word like the 's' in 'cats' or the suffix 'less' in 'careless'. The researchers explored teachers' knowledge and use of the key concepts of morphology and comprehension, and provided training aimed at increasing their explicit knowledge of these concepts.

Teacher interviews showed that their knowledge and understanding of phonemes increased and test data showed that their pupils' spelling improved relative to that of control groups.

What did the study discover about teachers' perceptions of pupils' difficulties with spelling?

The first stage of the study involved 51 teachers from 13 inner London state primary schools. Their pupils were aged between 7 and 11 years old (Key Stage 2). Children tended to be of lower than average socio-economic status, ethnically diverse and with a relatively high proportion for whom English was an additional language. Interviews and observation revealed teachers' working knowledge and practice.

Interviews:

The teachers were presented with the following list of words which illustrate a range of challenges for spellers: White, Opened, Pavement, Baseball, Richness, Motion, Combination, Slept, Prepare, Smoke, Dark, Uncovered. They were then asked about the difficulties their pupils had in spelling such words, and how they would address these difficulties.

Observation:

Each teacher was observed for one literacy hour, normally recorded on videotape (46 teachers were videotaped). These observations were then analysed on a number of dimensions, including a description of the main teaching events covered during the lesson, the teacher's objectives and the key concepts addressed.

Difficulties experienced by pupils included:

- problems relating to phonology eg. problems with spelling silent letters such as the 'h' or the 'e' in 'white', representing vowel sounds which could be difficult to "hear" unambiguously)
- difficulty with letter blends
- lack of familiarity with the meaning of a word
- errors directly related to morphemes, in particular, problems with past tense 'ed' endings, irregular past tense endings (eg. slept) and prefixes or suffixes.

The most common strategy used by teachers in relation to morphology and comprehension was direct oral questioning by the teacher.

How were changes in children's spelling ability assessed?

Data were collected from classes of 17 teachers who undertook training and 15 classes of teachers who had not attended the training. Altogether there were 346 control group children and 318 children in the intervention groups, spread over years 3 to 6. The children were assessed using two specially devised spelling tests. The first test was made up of 32 words, all but five of which contained at least one of the morphemes targeted by the intervention (spelling test).

The second test comprised ten invented words which also included the target morphemes (pseudo-word spelling test). Children could only spell the words in this second test correctly by applying the rules, as they had never seen the words before.

How were the teachers trained?

The teachers attended a ten-session literacy course covering comprehension and word structure over one school term provided by researchers. There were three main aspects to the word structure part of the course:

- introduction to theories and research about word structure
- involvement of the teachers in the research
- provision of a practical set of materials to enable teachers to focus explicitly on word structure in the classroom.

In addition the teachers were trained to explicitly teach connections between spelling, word structure and meaning.

What did the study show?

Impact on teachers

At the first session, and at the end of the course, the teachers were asked to write down their definition of a morpheme. Of the 17 teachers for whom there were data at the beginning and the end of the course, the number of teachers who accurately defined a morpheme rose from three to sixteen.

During interviews at the end of the course the teachers indicated their readiness to change practice in a number of ways including:

- teaching more explicit morphology and making connections between spelling, grammar and meaning
- spending time specifically on spelling by, for example, focusing one (one hour) literacy session per week on spelling
- building creative activities, such as class discussions and investigations around spelling
- introducing the use of spelling journals to help their pupils expand their store of words.

Impact on pupils

Before the course, the children in the 'control' classes were fairly evenly matched with the 'morphology' children, except for Year 3 where the control group were substantially better on both spelling and pseudo-word spelling. Seven weeks later, the morphology group had made significantly more progress than the control children on both tests.

Reference:

Jane Hurry and Mary Parker, Institute of Education, November 2004

Using the computer to help improve children's phonological skills

We chose this case study because it shows the potential benefits of using computers for practicing phonological skills. The study involved classes of Year 1 children from six primary or first schools in Oxfordshire. The peripatetic researcher-teacher set out to compare using literacy software with the more traditional paper-based (worksheet) format for teaching phonics. She found that the computer enhanced the children's phonological skills more than the paper-based formats, and this was particularly so for the girls. Working with a computer also generated far greater collaborative, task-related talk.

What did the intervention involve?

Pupils within each class were randomly assigned to one of three groups. Two groups of pupils followed the same phonological awareness programme, but whilst one group undertook practice exercises using computer software, the other group undertook more traditional paper-based practice exercises using a series of worksheets produced by the publishers of the computer software. A third (control) group also worked with the peripatetic researcher-teacher, but on a series of unconnected practical maths games, which contained no explicit literacy or ICT components. The intervention programme spanned six weeks in each school. The overall timing of the sessions was determined by the pre-programmed duration of the CD Rom exercises - an average of 20 minutes per practice session.

The researcher-teacher used the 'Rhyme and Analogy' software package (which was awarded the BETT award for 2000) published by Oxford University Press/Sherston Software for the intervention study. For the purposes of the study, the programme was not delivered in its entirety; the intervention groups just experienced elements from within it. The research therefore was not an evaluation of the 'Rhyme and Analogy' programme per se.

The researcher-teacher read the relevant story rhyme book before asking the children to complete the practice

exercises on either the computer or on worksheets (depending on the intervention group to which they had been allocated). The children undertook the practice exercises in pairs. The researcher-teacher was present with the children whilst they completed the relevant exercises, but did not provide any overt teaching at this time. This was the usual approach to skills practice within the participating classrooms.

All three groups were tested before and after the intervention programme on a range of literacy and mathematical learning outcomes to find out the degree to which each group had progressed relative to each other.

What did the study show?

The researcher-teacher's statistical analysis of the children's attainments showed that the children who used ICT to support their phonological awareness skills made greater improvements compared to those who completed worksheets. Interestingly, there was no statistically significant difference in the scores of the children in the paper-based group and the control group. This was despite the fact that the paper-based group had followed the same phonological programme as the computer group, whereas the control group had not practiced their phonological skills. In other words, completing the worksheets contributed little to the children's phonological awareness skills.

Perhaps surprisingly, the girls benefited more from the computer than the boys, which may have been due to the content and themes of the stories they listened to. The boys in the computer group did make more progress than the boys in the other two groups, but the girls made much more progress.

The researcher-teacher also noticed that the amount of talk generated was greater for the computer group and that this talk was predominantly task related. The computer group children tended to refer to the task in collaborative language, for example, 'We've done it' and 'We need a word for this'. This was in contrast to the more egocentric comments regarding the paper-based tasks, for example, 'You colour that and I'll colour this one', 'I done them all'.

There was some evidence that the children who worked with the computers were highly motivated by the computer program. The incidence of children expressing enjoyment through laughter was higher for the computer group and there was evidence of positive comments concerning the features of the computer program. But there were also incidences of children becoming restless and bored by the computer program, suggesting that teachers need to consider how frequently they can use computer programs of this kind without reducing their impact.

Reference:

Wild, M. (2004) Screen or page: will the use of computer-aided instruction improve phonological skills in Year 1 classes? Paper presented to BERA Annual Conference (UMIST 17th September 2004).

A multisensory approach to teaching phonics

We chose this case study because it shows the value of using a multisensory approach to phonics teaching. It also shows the importance of teaching related phonics rules sequentially within a short time frame. Teaching phonics rules in this way appeared to help pupils transfer learning from one situation to another.

Teachers at an inner city primary school in East London were interested in the ways in which children acquire an understanding of phonics and wanted to carry out an assessment of a brief intervention programme they had come across from their association with academic researchers - Professor Terezinha Nunes and Dr Ursula Pretzlik (of Oxford Brookes University) and Professor Peter Bryant (of the University of Oxford). The programme the teachers adopted consisted of a multisensory approach to teaching related spelling rules, which had already been used successfully with individual pupils in a research setting.

Altogether, the study involved five teachers and 65 Year 2 and Year 3 children. The children were divided equally into two mixed-age groups. Both groups received four one-hour teaching sessions spread over two

weeks. All children were taught the same rule in the first and second sessions. In the subsequent two sessions, the control group were taught an unrelated rule, while the target group were taught a related rule.

What did the multisensory approach involve?

The teachers used PowerPoint computer presentations which featured moving, talking puppets to teach basic split digraph rules where the final 'e' influences the pronunciation of the preceding vowel. One group was taught the related rules a/a-e (hat/hate) and o/o-e (hop/hope). Another group (the control) was taught unrelated rules. In the first two sessions, the control group children were taught the a/a-e rule and in the subsequent two sessions they were taught the k/ck (look/lock) rule which is based on the number of letters after the first vowel in the syllable.

In each session, the children were presented with 40 words for each rule. Each word was presented by one of two puppets - a dinosaur and a boy. The puppet said the word during the first slide. The children had to decide on the spelling of the word whilst the second slide was shown and the third slide showed the correct answer.

The 40 words for each rule were divided into four blocks of ten words. There were two types of block, which were alternated. In one block, the children were asked to make a simple judgement about whether or not the word should be spelled with a final e, or in the case of the k/ck rule whether the word should end in a 'k' or a 'ck'. With the other type, the children were asked to spell the whole word each time; they had to write the word on their sheets before they were given feedback about how the word was spelt. The transition from one block to the other was clearly signalled by the puppets.

To give all the children in the group a chance to produce an answer, the children were asked to put up a gold card with a red spot for one type of response and a blank gold card for the other type. The gold side of the cards was presented to the teacher, while the sides seen by the other children were white. On the white side, the relevant letters were written very faintly, for example 'a' or 'a-e'. In this way it was very easy for the teacher to keep track of whether the children were giving correct responses, but it was not easy for the children to look at other children's cards and imitate their responses. Thus they had to think for themselves.

What effect did the multisensory approach have on the children?

To find out the impact of their multisensory approach, the teachers assessed the children's spelling ability before the intervention, immediately after it and again seven weeks later. The children were first asked to spell, as well as they could, a list of 36 fairly common words, which were embedded in meaningful sentences. Then the were asked to spell a list of 36 pseudo-words like nad, dobe and crisk that had no meaning, but could be spelled according to the spelling rules that the children had been learning. The pseudo-words were also embedded in meaningful sentences. The reason for including the pseudo-words was to make sure that children were making use of the rules rather than just remembering the spelling of specific words. The sessions were video recorded to help the teacher researchers observe the children. The teachers also interviewed some of the children and some pupils kept research diaries to help them reflect on their learning.

The teachers found that the children learning the o/o-e rule directly after the a/a-e rule made more progress than the children who learned different rules. The connection between the two rules helped to reinforce the children's mastery of it, although the two groups had the same amount of experience with the a/a-e rule. Asking the pupils to select cards to represent sounds or write words involved them in the learning task and seemed to be an important means of reinforcing learning and triggering recall.

The children found the PowerPoint presentations visually stimulating and they engaged the children's attention, enabling them to concentrate for extended periods on tasks requiring careful listening and close attention to letter order. The puppets used in the PowerPoint presentations had an immediate appeal for the children. They felt encouraged to put the kind of effort into their learning that has a real impact on achievement:

'I liked the a-e and a game with the puppets. I found it a little bit hard, but I still tried my hardest... The nonsense words were a little bit hard, so I listened hard, really hard.'

Reference:

Dobbing, S. & Cook, H. (2004) Developing tasks for teaching and learning of basic rules and concepts in spelling: A multisensory approach. National Teacher Research Panel summary. Available at: www.standards.dfes.gov.uk/ntrp/publications/

A CD of the activities used in this study is available from Ursula Pretzlik upretzlik@brookes.ac.uk

Raising spelling achievement through paired cued spelling

We chose this case study because it shows how a teacher first assessed her children's spelling, then used the information to help her pair up more able with less able spellers to help her class learn the spelling of sounds within words and strategies which they could use when they were unsure how to spell a word. Children in a multicultural primary school in London (in which 72% of pupils spoke English as an additional language) worked in pairs to learn the spellings of words in 15-minute sessions, three times a week for six weeks. The project helped the children learn and remember a wide variety of strategies they could use when they were unsure of the spelling of a word. Working together benefited both the more able and less able spellers.

How did the teacher set up the paired work?

At the beginning of the study, the teacher assessed the children's spelling using a standardised test. She then used the results to pair the higher scoring children (the helpers) with the lower scoring children (the spellers) pairing the top-scoring helper with the top-scoring speller. For each spelling session, pupils were given two words to learn which illustrated the phonological rule of the week. She did not make the underlying rule explicit; rather she provided them with the opportunity to actively discover the rule through investigation and discussion.

When they had learned the words their teacher had given them, the spellers chose other words they felt would be useful to learn and worked on these with their helper. The helper assisted the speller in learning how to spell words, following a ten-step procedure. At the end of each session, the helper gave the speller a test to assess the short-term recall of the day's spellings. Each session lasted 15 minutes and ran three times a week for six weeks.

The ten steps were:

1. Pupils selected a word to learn or were given target words
2. Pairs entered the words into their spelling diaries
3. Pairs read the word together
4. Speller and helper choose cue together
5. Pairs repeat cues aloud
6. Speller says cues while helper writes word
7. Helper says cues while speller writes word
8. Speller writes word quickly and says cues aloud
9. Speller writes word quickly
10. Speller reads word aloud.

The teacher demonstrated the ten steps to the class, following a discussion about difficulties the children were having with some spellings. She explained to the children that those who were finding spelling tricky had been paired with somebody who could help them practise and learn different spellings. She repeated the demonstration the following day and put up a poster explaining the cued spelling steps.

Whilst the children were working on spelling in their pairs, the teacher focused on one or two pairs of children, asking them about what they were doing and guiding them in making generalisations from the words they were learning to other words with similar characteristics. At the end of the session, the teacher invited the children to report back and demonstrate to the class some cues they had found helpful.

What effect did the paired cued spelling project have on the children?

The teacher noted a marked difference in the children's attitudes from her observations and interviews with the children and the changes were still apparent six months later. Children in the paired cued spelling class were more confident, both about the spellings they knew, and about ways of finding out and learning new spellings. The children made greater independent use of dictionaries and relied less on one another for how to spell a word. When they did ask one another how to spell a word, the other child wrote the spelling down and put a circle around the 'tricky bit' to help their friend remember the spelling. Previously, the children would spell the word out orally, letter by letter.

The children in the paired cued spelling class were also able to discuss a wider range of techniques for learning and remembering spellings. For example, they said:

- I think of something else that's got that word in it
- I learn the word, say if it was similar to something, I could learn it
- I would look it up in the dictionary
- I'd use it a lot of times
- I'd put it up in a room so I could see it and remember it.

Interestingly, the helpers' spelling attainment continued to improve during the six months after the intervention, whereas the spellers' test scores remained the same as they had been at the end of the intervention period. The teacher suggested that this may have been because the helpers were more able to generalise about new approaches that they used which they could then apply independently. The helper children had been put in a situation where each session they had to explain and rehearse rules for the benefit of their speller and they were able to hang their new-found techniques onto their already well established knowledge. Although the use of improved skills was not reflected in the spellers' test scores six months later, they were still able to articulate them during interviews and the teacher observed them using the strategies.

Reference:

Sowerby, J. (1998) *Extending children's spelling strategies*. Teacher Research Grant Summary, 2nd year 1997-98

The value of training teaching assistants to deliver phonics interventions

We chose this case study because it shows the valuable role that teaching assistants (when trained) can play in enhancing children's phonological skills. The teaching assistants (TAs) were trained to deliver two phonics intervention programmes designed to promote different sets of skills that form the foundations for literacy development (a 'Phonology with Reading' programme and an 'Oral Language' programme). The children who received the interventions showed significant language delay at school entry and received the programme during the summer term of their Reception year (around age 5) and the autumn term of Year 1 (around age 6). The programmes ran over two ten-week periods, each of which was divided into an initial introduction week followed by three three-week teaching blocks.

What did the 'phonology with reading programme' involve?

The phonology with reading programme had three main components:

- training in letter-sound knowledge
- training in oral phonological awareness
- reading books.

Direct teaching in sight word recognition was also included in order to build on children's sight word

vocabulary. Over the course of the 20-week intervention, children were taught 36 sounds. Letter-sound knowledge was reinforced through reading, writing, and phonological awareness activities including blending and segmenting.

Oral phonological awareness was an important part of each group and individual session. Children spent approximately five minutes in each session blending and segmenting words. The children were given book work on a regular basis in order to link letter-sound knowledge and oral phonological awareness with reading. In every group session, the TA read a storybook that had been carefully selected to contain many examples of the sound of the day. The children were given the opportunity to talk about the book both before and after hearing the story. They were then encouraged to pick words in the book that contained the sound of the day with this book forming the basis for the segmenting and blending activities in that session. In the individual sessions, children read two books aloud to the TA.

What did the 'oral language programme' involve?

The main aim of the language programme was to improve children's oral language skills in order to provide a solid foundation for emergent literacy skills. The programme targeted skills important to the development of good oral language (listening, vocabulary knowledge, narrative skills, independent speaking, inferencing, question generation, and following instructions).

A key feature of this programme was the development of effective listening skills. At the beginning of the programme, children were introduced to Sam the bear, who had four rules of listening. Every session Sam watched to make sure that the children followed the rules. Each teaching block was given a different theme, selected through discussion with primary school teachers and representative of the topics taught in Reception and Year 1. Narrative skills were addressed in both group and individual sessions. Many of the activities in the programme revolved around creating stories. These stories were then used as a foundation on which to build and introduce concepts, such as using whole sentences in a story, using connectives, and using descriptive language.

Independent speaking was encouraged in all sessions. TAs used direct inferencing activities which encouraged children to think about cause and effect. Question words were taught throughout the programme and as well as answering questions, children were encouraged to seek information by generating their own questions.

What training did the TAs receive?

TAs received full training in how to deliver the intervention programmes, including how to monitor progress. Initial training was carried out over four days; a two-day intensive training course for each programme and two refresher days just prior to the beginning of each 10-week intervention period.

TAs were required to attend fortnightly tutorials throughout the 20 weeks and in-school tutorials were held for each TA, whereby a member of the research team observed the TA teaching both group and individual sessions in each arm of the intervention. Immediate feedback was given to each TA following these observations.

How effective were the programmes at improving the children's literacy skills?

Both intervention programmes were effective in promoting basic skills that underlie reading comprehension:

- vocabulary and grammatical skills were fostered significantly better by the language programme
- word-level reading skills and phoneme awareness were fostered significantly better by the phonology with reading programme.

Equally important, training the TAs to deliver the interventions made the them feel valued and gave them a sense of personal development. They said:

'It's spurred me on to do more'

'I'd do this continuously. It gives me a sense of self-worth...If you do another intervention, put my name at the top of the list'

'I enjoy the autonomy of it. The kids feel important. So do I!'

Reference:

The 'Nuffield Language for Reading' project.

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Further reading

1. The study
Rose, J. (2006) Independent review of the teaching of early reading. Final Report. London: DfES.
http://www.standards.dcsf.gov.uk/phonics/report.pdf

2. Related research

Torgerson, C.J., Brooks, G. & Hall, J. (2006) A systematic review of the research literature on the use of phonics in the teaching of reading and spelling. London: DfES.
www.dfes.gov.uk/research/programmeofresearch/index.cfm?type=5&keywordlist1=0&keywordlist2=0&keywordlist3=0&andor=

Accelerating reading and spelling with synthetic phonics
www.scotland.gov.uk/Publications/2003/03/16513/18923

The effects of synthetic phonics teaching on reading and spelling attainment
www.scotland.gov.uk/Publications/2005/02/20688/52449

The Literacy Trust
www.literacytrust.org.uk/Research/phonicsabstracts.html

3. Resources

Learning and teaching Scotland - Synthetic phonics programme framework
www.ltscotland.org.uk/5to14/specialfocus/earlyintervention/issues/phonics.asp

Synthetic phonics programmes and resources
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Appraisal

Robustness
The Rose review set out to examine:

- best practice in the teaching of early reading and phonics
- the kind of provision that best supports children with significant literacy difficulties and enables them to catch up with their peers, and how such intervention programmes relate to synthetic phonics teaching
- how leadership and management in schools can support the teaching of reading and practitioners' skills.

In so doing, it drew on a wide range of evidence, including:

- research on the teaching of reading and other aspects of literacy
- written evidence and oral accounts of effective practice from acknowledged experts in the field
- papers submitted to the Education and Skills Committee report, Teaching children to read
- a small scale survey by Her Majesty's Inspectors of Schools, involving school visits
- Ofsted reports
- visits by the review team to projects where good achievement in reading was related to a particular phonic programme
- early findings from the Primary National Strategy Early Reading Development Pilot
- responses to the review's website.

The review team decided that where directly applicable research findings were inconclusive, observation based on common sense was a reasonable guide. They concluded that 'there is much convincing evidence to show from the practice observed that ...'synthetic' phonics is the form of systematic phonic work that offers the vast majority of beginners the best route to becoming skilled readers'. The report comments that 'among other strengths, this is because it teaches children directly what they need to know'. The Rose report makes a convincing case for the inadequacy of the existing 'searchlights' model for beginner readers.

Relevance
It is vital that teachers and leaders at primary level are clear about the recommendations of the Rose review because they have been incorporated into the revised national literacy framework, the new early-years foundation stage, the revised standards for qualified teacher status and the revisions to the national curriculum for English. In particular, all teachers in England are now expected to teach 'synthetic' phonics as the first and main strategy for reading. The approach replaces the searchlights multi-cueing model advocated by the 1998 National Literacy Strategy. The Rose review points to the value of teaching beginner readers to decode over comprehension. It suggests the importance of practitioners realising that if phonic word-reading skills are taught systematically first and fast, decoding becomes automatic quickly, allowing children to devote their conscious attention more fully to the meaning of what they read.

Applicability
The review identifies the distinct features of synthetic phonics in particular and the characteristics of high quality phonics work in general, including multi sensory activities and praising children for their efforts and achievement. It also highlights the importance of assessment and early intervention, and points to the kind of training and support for teaching phonics that will benefit teachers most. Consequently, teachers involved in the teaching of reading will need to:

- be able to plan and implement a high-quality phonics programme
- use multi-sensory activities and a mix of resources including ICT within phonics sessions
- praise and encourage achievement at every opportunity
- judge how to organise teaching groups to provide optimum conditions for learning
- monitor children's progress through careful observation and robust assessment.

Headteachers will need to:

- make sure that at least one senior member of staff is fully able to take the lead on literacy, especially phonic work
- make sure that phonic work is given appropriate priority in teaching beginner readers and this is reflected in decisions about training for staff, including teaching assistants
- put strategies in place to ensure that no child "falls through the net", such as comprehensive assessment and allocating resources for catch-up work
- monitor the quality and consistency of the teaching of reading and its outcomes
- strengthen awareness of how phonic work could be applied throughout the curriculum.

Writing

The report is written in a very readable style. The key findings are well signposted according to chapters, which are further divided into subsections and numbered points. There is also a glossary of key terms.
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