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Her Majesty's Inspectorate
for Education and Training in Wales

Improving the learning and teaching of early reading skills

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INVESTOR IN PEOPLE

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- ➢ nursery schools and settings that are maintained by, or receive funding from, local education authorities (LEAs);
- ➢ primary schools;
- ➢ secondary schools;
- ➢ special schools;
- ➢ pupil referral units;
- ➢ independent schools;
- ➢ further education;
- ➢ adult and community-based learning;
- ➢ youth support services;
- ➢ LEAs;
- ➢ teacher education and training;
- ➢ work-based learning;
- ➢ careers companies; and
- ➢ the education, guidance and training elements of Jobcentre plus.

Estyn also:

- ➢ provides advice on quality and standards in education and training in Wales to the National Assembly for Wales and others; and
- ➢ makes public good practice based on inspection evidence.

Foreword

Effective early reading skills are the essential building blocks for language and literacy learning. Being able to read accurately and fluently and with confidence and understanding, helps pupils to achieve high standards and gives them more opportunities for success at school as well as a start in life, the importance of which cannot be overstated.

Over the last decade, I have reported steady improvements in pupils' achievements in reading and in areas of language and literacy in both Welsh and English. Pupils have made this good progress because of the increasingly effective learning and teaching of early reading skills in many nursery settings and primary schools. This good progress is also the result of an ever-stronger start to education, including the expansion of high quality pre-school provision, early intervention and broader support to families as part of efforts to promote social inclusion. However, a significant number of pupils make slower progress than is needed to bridge the gap between their potential and their achievements in language and literacy learning, and boys do not do as well as girls. Early difficulties in language and literacy have a negative impact on pupils' achievement, confidence and motivation in school and can have a damaging effect on their future lives.

The focus of this report is therefore action for improvement. The starting point for improvement is the good practice that already exists in many schools and helps pupils to gain early reading skills successfully. The challenge is to spread this practice more widely and consistently so that the learning and teaching of early reading skills in all schools across Wales is as good as it can possibly be. Improving achievement in Welsh and English must be a key priority if we are to ensure that all Welsh children fulfil their potential.

**Susan Lewis
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Introduction

1   The Welsh Assembly Government commissioned Estyn to undertake this work. The report is intended mainly for practitioners: for the teachers and learning support assistants who are involved in teaching pupils to read as well as for local education authority (LEA) advisers. There are questions in Appendix 3 of this report to help schools to review and improve important areas of their work. The report may also be of use to parents who are interested in knowing how schools teach reading and how they can help their child to learn to read.

2   Learning to read is a key educational goal. One of the most important challenges teachers face is making sure their pupils can read. For both children and adults, the ability to read opens up new worlds and opportunities.

3   There are many considerations in the learning and teaching of early reading skills. This report does not aim to provide a definitive account of all of these considerations. The work focuses on several key areas, particularly the learning and teaching of phonics (explained in the glossary). The report identifies the characteristics of effective practice in order to improve the learning and teaching of early reading skills.

4   Recent research into the effects of different ways of teaching phonics, known as synthetic phonics (explained in the glossary) and analytic phonics (explained in the glossary) in primary schools in Clackmannanshire, Scotland, claim some significant results in the gains made by pupils in their reading skills, particularly for boys. Although there is not full agreement about the merits of these different approaches, the outcome of this research is influencing approaches to the teaching of reading in parts of the United Kingdom (UK).

5   Currently, in Wales, changes are being made to the school curriculum. These changes include the introduction of a Foundation Phase for 3-7 year olds and a review of the National Curriculum Orders for Welsh and English. At present, 'Raising Standards of Literacy in Primary Schools: A Framework for Action in Wales' describes the Welsh Assembly Government's policy for improving standards of learning and teaching of literacy within primary schools. This document has guided schools' practice since its publication around ten years ago. Therefore, in a context of new research findings and curriculum changes, it is timely to consider the learning and teaching of early reading skills and to provide guidance to help raise standards.

6   As part of this work, Estyn has commissioned the National Centre for Language and Literacy, the University of Reading, to undertake a review of literature on approaches to the use of phonics in the teaching of reading in early year's settings and primary schools (see Appendix 1 for the full report).

7   Over the past ten years, National Curriculum results and inspection evidence have shown that standards of reading in Welsh and English in primary schools in Wales have risen steadily. Good progress in pupils' literacy skills contributes greatly to the standards they achieve in other areas of work. However, there are pupils in key stage 1 who do not make enough progress and pupils whose weak literacy skills hold them back from achieving their potential in other curriculum areas and beyond.

8   There are also big differences in the achievements of boys and girls. In key stage 1 in 2006, boys are around ten percentage points behind girls in standards of reading in Welsh and English. This level of difference in performance between boys and girls continues to the end of the primary phase. As pupils progress to secondary school, the demands on their literacy skills increase. Boys' less well developed skills in literacy are recognised as one of the contributory factors that lead to an even wider gap between the performance of boys and girls at this stage. Getting literacy right at the start of pupils' schooling is, therefore, vital to their long-term educational success.

9   In Wales, around half a million adults have very real difficulties with reading, although there are not large numbers of illiterate adults. However, too many people find it difficult to cope with the demands of written information and images in their daily lives. In terms of reading skills, Wales performs poorly in comparison with many other industrialised countries. For example, we have nearly twice as many adults at the lowest level of literacy as Germany. Making sure that pupils are successful in gaining reading skills is critical to their employment prospects and to the future of Wales.

10   Throughout the report, reference to schools includes maintained nursery schools and reference to pupils includes children in nursery and reception classes in nursery, infant and primary schools.

Background

11   Reading is a highly complex activity involving a number of processes, including word recognition and comprehension. Word recognition is the process of perceiving how written symbols correspond to the spoken language. Comprehension is the process of making sense of words, sentences and connected text. Readers also make use of their knowledge of vocabulary and grammar and their wider experience with texts in order to help them understand the written word.

12   The importance of gaining reading skills has led researchers and teachers over many years to consider different approaches in order to find the most effective and successful learning and teaching methods. It is probably true to say that more has been written about the teaching of reading than any other area of work in schools.

13   Over the past fifty years, schools have used different methods to teach reading. In the 1950s, phonics was the preferred method of teaching reading in most schools in the UK. Pupils had to master the initial sounds of the alphabet and then blend them together to produce words. By the 1970s, an approach known as 'the look and say' method became widespread. Pupils focused on learning whole words and sometimes whole sentences. As their repertoire of words and phases extended, so too did the range of books they read.

14   In the 1980s, the findings of research into cognitive development, which is the process of acquiring knowledge and reasoning, strongly influenced the teaching of reading. Pupils were encouraged to use their knowledge of the world and the context of the story to help them attempt unfamiliar words and make sense of what they read. Many schools moved away from using a reading scheme, which grades books according to their level of difficulty. Some schools used a method, usually referred to as the 'real books' approach, which promoted individualised reading. Pupils were able to choose from a wide range of individual books that were not a part of a reading scheme.

15   Since the 1990s, there is general agreement that no one method of teaching reading is suitable for all learners. Currently, most schools use a mix of different approaches, although staff may emphasise one approach more than others in their teaching. At the beginning of the 21st century, the debate about effective ways to teach reading continues. The focus of recent debate has been on the most effective way of learning and teaching phonics. In Wales, schools are not required to use a particular method or methods to teach children to read. They are able to determine how to teach pupils to read.

16   While there are different views about the most effective way to teach reading, there is widespread agreement about the type of learning experiences pupils should have by the time they are five. These experiences are set out in the Desirable Outcomes for Children's Learning before Compulsory School Age as:

- listening to a good story;

- choosing a book and holding it the right way; and

- understanding that written symbols have sound and meaning.

17   In key stage 1, the National Curriculum orders for Welsh and English identify a core set of skills that pupils in this age range should have if they are to read accurately, fluently and with understanding. These skills include:

- phonic and graphic knowledge (explained in the glossary);

- word recognition;

- grammatical knowledge; and

- contextual understanding.

18   In Welsh, along with languages such as Greek, Italian and Spanish, there are consistent letter-sound correspondences. There are inconsistencies in the letter-sound correspondences of the English language. Generally, research shows that it is harder to learn to read and write in English because the relationship between sounds and letters is more complex.

The evidence base of the report

19   The findings in this report are based on:

- an analysis of the inspection outcomes of over 250 primary schools since 2004;

- observations of the teaching of reading in 22 Welsh-medium and English-medium primary schools;

- information gained from interviews with staff in Welsh-medium and English-medium primary schools;

- information gained from interviews with literacy advisers from ten LEAs;

- scrutiny of documentation provided by schools and LEAs; and

- a literature review conducted by the National Centre for Language and Literacy, The University of Reading.

20   In addition, HMI visited a small number of schools in England and Scotland to observe the teaching of reading and discuss teaching methods with staff. HMI also considered the learning and teaching of reading with colleagues in other Education and Training Inspectorates and the Basic Skills Agency.

Main findings

21 Many schools already support pupils well in developing their early reading skills. Pupils achieve good standards in their early reading skills where systematic programmes to develop sound language and literacy skills are implemented consistently.

22 Research and inspection evidence endorses phonics as an important skill in learning to read. However, this evidence recognises that, by itself, phonics is not the only skill that pupils need in order to be able to read successfully. Besides engaging in the mechanics of decoding words, readers also need to be able to make sense of what they read. Gaining phonic skills is one of a range of strategies that pupils need to help them read.

23 The review of literature (see Appendix 1) does not show conclusively that synthetic phonics instruction is more effective than analytic phonic instruction. While there are strongly held positions on the relative merits of different approaches, there is insufficient evidence to support the assertion that one approach is the most effective. Improving the quality and consistency of work on early reading skills within and across schools, in line with the effective practice identified in this report, is more likely to raise standards than shifting learning and teaching practices to focus only on one approach.

24 Regardless of the type of phonic instruction, there are characteristics that are common to any successful learning and teaching of reading. One of the most influential factors in pupils' learning of phonics is the systematic teaching of skills. This means that pupils must learn the major grapheme-phoneme correspondences (explained in the glossary) in a clearly defined sequence. This type of phonics teaching is associated with better progress in pupils' reading accuracy across all ability levels. Inspection evidence illustrates that a minority of schools do not use systematic phonics teaching as part of their routine practices.

25 Successful teaching of phonics recognises that learning needs to be motivating and enjoyable. Where schools use exciting, interactive approaches and multi-sensory (explained in the glossary) work to teach early reading skills, they ensure high levels of pupil interest and engagement. These approaches are particularly appealing to boys because they help to maintain their involvement in learning, which means that they usually make better progress. In a minority of schools, pupils' phonic work is dull, uninspiring and restricts the progress they make.

26 There is wide variation in the pace at which schools cover phonic programmes in English. These range from the teaching of one new sound to five new sounds each week. Teaching a small number of sounds gives pupils plenty of time to be secure in their knowledge, but it takes a long time to cover the programme. Slow coverage of the work can hold back pupils' progress and be demotivating. Schools that teach more sounds each week cover the programme more quickly. Pupils gain skills at a faster pace and can then apply their developing knowledge of phonics to their reading tasks.

27 Many schools give good attention to developing pupils' reading strategies. These strategies include phonic, graphic and grammatical knowledge, recognition of words and contextual understanding. This work helps pupils to establish firm foundations for language and literacy learning and make progress in developing fluency, accuracy and comprehension.

28 Beginning and sustaining the habit and enjoyment of reading are essential to pupils' long-term educational success and personal fulfilment. Most schools give good attention to fostering pupils' positive attitudes to language and literacy. In these schools, pupils have plenty of opportunities to enjoy language activities, such as rhymes, songs and language play as well as to handle and share books. These are essential early learning experiences.

29 Pupils' achievement is usually at its strongest when schools ensure that the skills of listening and speaking, reading and writing, reinforce each other. In particular, developing listening and speaking skills is vital to success in learning to read. While many pupils have a good variety of language experiences before they begin school, others do not. Over the past five years, inspection evidence shows that more and more pupils begin school with difficulties in speaking clearly and listening carefully to each other and to adults. Often, pupils have had little experience of nursery rhymes or sharing stories at home, which means that some schools have a lot to do to help these pupils catch up with their peers.

30 Research recognises phonological and phonemic awareness (explained in the glossary) as important cognitive skills underpinning literacy. Many schools already give attention to developing this awareness as important preparation for reading. In the most effective practice, pupils gain these skills as an integral part of the work they do within a rich language environment, which provides sound foundations for language and literacy learning.

31 Schools give varying levels of attention to phonics in the teaching of Welsh as a second language. Often, there is a greater focus on other reading strategies, particularly the 'look and say', approach (explained in the glossary). While there should not be an undue emphasis on decoding skills for pupils who are operating in a second language, both first and second language learners can benefit from learning phonics. This knowledge can accelerate their word-recognition and spelling skills.

32 Assessment plays a key role in supporting the development of early reading skills. In the most effective practice, schools track pupils' progress carefully and give attention to their performance across the four areas of listening and speaking, reading and writing. These schools systematically assess pupils' acquisition of early reading skills and use this information very well to inform the planning of new work.

33 Parents play an important role in supporting their children's language and literacy development. While most pupils benefit from sharing books, nursery rhymes and songs with their parents, an increasing number of pupils do not begin their learning at school with these advantages. Most schools have good partnerships with parents. Usually, staff explain the way the school teaches reading and help parents to know what to do to support the development of their child's reading skills at home. A small

minority of schools do not make certain that parents are well informed and involved in supporting the development of their children's reading skills.

34   Clear leadership and effective management in schools are important for achieving high standards, in reading. As in other areas of work, effective leaders and managers secure consistency in learning and teaching practices and build a whole-school commitment to achieving good standards. In a small number of schools, the skill, knowledge and dynamic leadership shown by a key member of staff have been highly influential factors in raising the standards of early reading skills. In a small minority of schools, leaders and managers are not effective enough in giving direction to the learning and teaching of reading. Sometimes, this is because monitoring and evaluation processes are underdeveloped. At other times, it is because leaders and managers do not know themselves what to do to improve the standards of early reading skills.

Recommendations

Schools should:

R1   give more emphasis to the development of listening and speaking skills so that pupils have stronger foundations for language and literacy learning;

R2   ensure that the teaching of phonics is systematically and consistently undertaken as an integrated part of approaches to learning to read;

R3   make certain that teaching strategies meet boys' learning needs;

R4   speed up the teaching of phonics programmes in line with the effective practice described in this report, so that pupils make as much early progress as possible;

R5   regularly assess pupils' reading skills and use the information to inform intervention strategies and new work;

R6   monitor and evaluate the teaching of early reading in line with the characteristics of effective practice identified in this report; and

R7   monitor and evaluate the learning and teaching of phonics in Welsh as a second language to ensure that pupils have this strategy to help them read in Welsh.

Local education authorities should:

R8   make sure that their literacy strategies take account of the effective practice described in this report;

R9   support schools in developing pupils' listening and speaking skills; and

R10 help schools to monitor and evaluate the role of phonics in Welsh as a second language.

Providers of initial teacher education and training should:

R11 note the contents of this report to inform the training of new teachers.

The Welsh Assembly Government should:

R12 give a high profile to the development of listening and speaking skills and phonological and phonemic awareness in the revisions to the National Curriculum Orders and to the Foundation Phase Guidance materials; and

R13 make sure that phonics is an integral part of the National Curriculum Orders and programmes of study for Welsh, English and Welsh as a second language and the Foundation Phase Guidance materials within a balanced approach to language and literacy.

Developing early reading skills

35   At the earliest stages, learning to read is dependent upon the spoken language that pupils bring to school. Inspection evidence shows that when many pupils start school, they are already familiar with storybooks, nursery rhymes and print, and some will have already have started to recognise single letters and words. Other pupils, however, have much more limited experience of using language, sharing stories, songs and rhymes with adults. In some cases, pupils may have general or specific learning needs. Pupils may also be learning to read in a language that is different from their spoken language. These different starting points and experiences provide challenges for schools in helping pupils develop the early reading skills they need to become successful learners.

36   Developing positive attitudes to literacy from the earliest age is vital to future success and enjoyment. In particular, this time is often critical for developing boys' interest in language and literacy. In general, boys often prefer more energetic and physically active pursuits. They can find it harder to acquire the less lively skills of reading and writing. However, sharing and enjoying books at home and at school are important experiences that lay the foundations of reading for pleasure and information. Beginning and sustaining the habit and enjoyment of reading, are essential to pupils' long-term educational success and personal fulfilment. Pupils gain essential early learning experiences when there are plenty of opportunities for them to enjoy, handle and look at books. When staff model the reading of books to pupils, this work demonstrates important aspects of how reading occurs, such as where to begin reading, as well as providing good opportunities to enjoy, discuss and respond to stories and poetry.

37   Understanding how books work is an important early reading skill and develops a concept of print. Readers need to know that the text conveys meaning and information. A concept of print also includes knowing the way that books work, according to the style of the Welsh and English languages. This knowledge includes knowing where to begin reading, such as starting at the top of the page and continuing to the bottom as well as beginning reading each line from left to right. Establishing this knowledge is fundamental to later learning.

38   Inspection evidence shows that where school practice is most effective, pupils receive a rich language and literacy programme that provides the framework to support reading. Commonly, pupils' achievement is at its strongest when schools ensure that learning about listening and speaking, reading and writing, reinforce each other. For example, specific links between reading and spelling are productive in developing familiarity with letters, the composition of words and their sounds and include opportunities to link and extend pupils' listening, speaking, reading and writing skills closely together. Importantly, these schools provide learning activities that are imaginative and varied. The activities promote pupils' interest in reading for enjoyment, for imaginative purposes and for learning.

39   The review of literature considered research on the teaching of reading to pupils with English as an additional language and those learning Welsh as a second language. While the review found that the research is limited and often inconclusive, overall, it

suggested that both groups of pupils benefited from learning to use a range of strategies for reading, including phonics. However, attention to phonics should not take place in isolation from other language activities, which promote vocabulary building and comprehension. Research also emphasises the importance of providing language support to help pupils cope with the increasing demands on their comprehension skills as they progress in a second or additional language.

40   The review of literature and inspection evidence endorses the need for pupils to gain a range of skills and apply them as different strategies in order to become successful readers. Inspection evidence shows that most schools do not subscribe to a single approach to the teaching of reading but help pupils gain a range of strategies. Fluent readers draw on a range of strategies to read with speed, accuracy and proper expression. Fluency is one of the several critical factors necessary for reading comprehension. Boys in particular often have more problems with the initial attainment of fluency in reading.

41   The development of early reading skills should provide pupils with a secure basis for establishing and extending their literacy skills, so that as they reach the end of key stage 1 they are able to read:

- with increasing fluency and expression;

- more widely and at greater length; and

- to find information from a passage.

42   In addition, pupils should be able to make simple inferences, discuss the effectiveness of language and identify main ideas. Pupils should also be able to demonstrate their skills in understanding the language and structure of simple passages of information and they should be able to discuss books and express their own responses.

| **The role of listening and speaking in learning to read** |

43   The four strands of language: listening, speaking, reading and writing are interrelated. Early progress in reading depends on the learner's oral language development. Developing good listening and speaking skills is therefore vital to success in learning to read.

44   When pupils begin school, they bring with them a variety of language experiences and skills. Many pupils will have enjoyed sharing songs, stories and rhymes at home as well as other opportunities to develop their language skills. Inspection evidence shows that on entry to school, many pupils listen well, speak confidently and use a wide range of words.

45   However, over the past five years, inspection evidence also shows that an increasing proportion of pupils start school with difficulty in speaking clearly and listening carefully to each other and to adults. Often, these pupils have had no experience of nursery rhymes or sharing stories. A survey of teachers in Wales undertaken by the Basic Skills Agency in 2002 showed that the majority considered that more and more children begin school without good speaking and listening skills. In particular, teachers believed that an increasing number of children were unable to speak audibly, understand and recite rhymes and songs, and listen to and follow instructions. Inspection evidence shows that by the age of five, about one in seven pupils have difficulties in listening and speaking, despite making progress during their time in school. By the end of key stage 1, around one in six pupils do not achieve the level expected of seven year olds in listening and speaking. Difficulty in listening and speaking invariably limits pupils' progress in learning to read. It also hinders their progress in all other areas of learning, resulting in these pupils falling further behind their peers.

46   Research evidence also shows that pupils' progress in language and literacy can be influenced by the varying success they have in transposing their already acquired skills in these areas to the school setting. Often referred to as 'the currency of home capital', differences, such as socio-economic status, race, bilingualism and gender affect how pupils respond to learning in the classroom context as well as the way they demonstrate their knowledge and language skills. In addition, the community and cultural practices that pupils bring to school are not always obvious or fully understood by schools and can therefore go unrecognised and lack influence on learning, teaching and assessment practices.

47   With language at the heart of pupils' learning, schools need to make certain that listening and speaking skills are key priorities and take account of pupils' background. The recently published draft guidance for Language, Literacy and Communication Skills for the Foundation Phase provides a framework for this work and highlights the importance of linking different elements of language and literacy. The National Curriculum requirements already require schools to develop pupils' listening and speaking skills in Welsh or English within an integrated language programme. However, although listening and speaking are essential elements in learning, inspection evidence indicates that many schools could do more to give

emphasis to the contribution of listening and speaking as essential pre-requisites for learning to read.

48   Recently, across Wales, a number of local education authorities (LEAs), have successfully introduced initiatives that focus on improving standards of listening and speaking. This work has supported schools in their work to develop pupils' skills. Building further on this work and improving understanding of the role of listening and speaking in reading are important in the drive to build stronger foundations for learning in schools and raising standards of reading.

Developing phonological and phonemic awareness

49 In Welsh and English, words are made of units of sound and letters. In both languages, letter-patterns represent these units of sound. The phonological structure of Welsh differs in a number of ways from that of English. Although the numbers of consonants and vowels are both slightly larger in Welsh than in English, the number and complexity of consonant clusters (explained in the glossary) is greater in English than in Welsh. Despite some differences in language structures, developing phonological and phonemic awareness are necessary for learning to read in either Welsh or English.

50 The review of literature highlights the difficulty of gaining an agreed definition of phonological and phonemic awareness. However, in general, phonological awareness refers to the set of skills, which enable us to analyse sounds in words we say and hear. Phonemic awareness is usually concerned with gaining an awareness of individual phonemes, the smallest unit of sound within words. Despite the difficulties of definition, there is agreement about the importance of phonological and phonemic awareness in learning to read and both aspects are important cognitive skills underpinning literacy. Phonological and phonemic awareness are not the same as phonics, which is concerned with the relationship between letters and sounds in written words.

51 Pupils need to develop the ability to focus, quite deliberately, on the individual sounds in spoken words. This analysis is an essential early reading skill and helps developing readers make use of the alphabetic principle, which underpins the written language systems of Welsh and English. Generally, pupils who do well in phoneme awareness tests are at an advantage in learning to read. Research also shows that problems encountered with word reading, as well as later literacy difficulties, can often be because of underlying difficulties in pupils' phonological processing ability.

52 The importance of developing pupils' phonological and phonemic awareness is well established. 'Raising Standards of Literacy in Primary Schools: A framework for Action in Wales' refers to the value of developing these aspects and many schools take account of this guidance. In these schools, pupils gain an explicit awareness of the sounds in words, through experiences with word games, songs, nursery rhymes, jingles, poetry and alliteration. These activities provide good opportunities for pupils to reflect on words and become aware of the similarities and differences between words and sounds. As a result, these pupils are confident in saying that two words 'sound the same' or rhyme. The activities also help pupils to identify syllables in words, which is necessary for them to understand sound-structure relationships.

53 The weight of research evidence suggests that learning and teaching about phonological and phonemic awareness are most effective when work is integrated fully into language and literacy learning in the classroom. In particular, work should occur in meaningful and enjoyable learning situations, which avoid dealing with these aspects discretely.

54 A minority of schools do not give enough attention to the systematic development of phonological and phonemic awareness. As a result, pupils often find it difficult to

focus on recognising sounds in words, such as the 'ay' in play, or cannot identify if 'ay' is at the beginning, middle or end of the word. Pupils may also find it difficult to recognise the same sound in different words, such as the 'b' in 'bell', 'boy' and 'bat'. Research into the literacy difficulties of older pupils often indicates that their inability to detect and analyse sounds in speech and print as well as weak rhyming skills inhibits their later progress in reading and learning generally.

The characteristics of effective learning and teaching of phonological and phonemic awareness include:

✓ establishing good listening behaviour so that pupils are attentive and concentrate on what they hear;

✓ developing focused listening skills so that pupils can analyse and be discriminating about the individual words and sounds they hear;

✓ emphasising oral language play, such as word games, which contribute greatly to the development of phonological awareness;

✓ helping pupils to reflect much more deliberately on words so that they become skilled at distinguishing and segmenting sounds within words and between words;

✓ developing rhyme awareness as an important part of oral language activities;

✓ developing syllable awareness so that pupils can hear parts or segments of phonemes that comprise the rhythm of the word;

✓ assessing pupils' skills regularly so that this information can inform the planning of new work; and

✓ using many different activities, such as imaginative play and drama, indoor and outdoor play experiences, to provide meaningful learning contexts for enjoying, sharing and developing language skills.

55 Schools should place a stronger emphasis on developing phonological and phonemic awareness from the earliest stages in order to better prepare pupils for future language and literacy learning.

The learning and teaching of phonics

56   Phonics is the study of the way in which spellings represent the sounds that make up words. Around seventy-five per cent of words in English and almost all words in the Welsh language are phonically regular. Learning about sound and symbol relationships is therefore important in learning to read.

57   The findings of the review of literature justify the teaching of phonics as an important skill in learning to read. However, the review and inspection evidence recognise that by itself, phonics is not the only skill necessary for reading. This is because being able to decode the words alone is not enough; readers also need to be able to make sense of what they read. Pupils should use phonics as one of the strategies they need to help them read. Learning phonics should be part of a balanced language and literacy programme that also includes word-recognition and comprehension.

58   Phonics instruction is a set of approaches to the initial teaching of reading and writing, which focus on the relationship between letters and sound. Recently, attention has focused on approaches known as synthetic and analytic phonics in order to establish the most effective form of instruction. The review of literature and inspection evidence could not determine conclusively that the teaching of synthetic phonics was more effective than the teaching of analytic phonics. Inspection evidence also shows that schools tend not to adhere rigidly to one type of approach. For example, some schools teach phonics using 'onset' and 'rime' to divide words into openings and endings, such as 'str' and 'eet', which is an approach usually recognised as analytic phonics. This work takes place alongside the segmenting of words into the smallest units of sound, which is a synthetic phonic approach.

59   It is evident that, regardless of the approach or mix of approaches taken, a number of common characteristics contribute to the most successful learning and teaching of phonics. Inspection and research evidence show that pupils gain good levels of phonic skills and make fast progress in applying these skills to help them read, when these characteristics are evident in the learning and teaching practices of schools.

60   The common characteristics are:

   ✓ a systematic phonic programme;

   ✓ consistency in the way that phonics is taught so that there is continuity in pupils' learning;

   ✓ frequent and regular delivery of the programme;

   ✓ a brisk pace to the teaching of the programme;

   ✓ schools' good knowledge and understanding of phonics;

   ✓ teaching that uses motivating and interesting approaches;

   ✓ skilful use of assessment to inform the next steps; and

✓ the use of different ways to support pupils who make slower or insecure progress.

61   The findings from the review of literature and inspection evidence indicate that systematic phonics teaching is associated with better progress in pupils' reading accuracy across all ability levels. In a systematic approach, there is good attention to the phonic knowledge, understanding and skills that pupils need to acquire as well as the stage at which they should acquire these skills. Critically, schools' phonic programmes should include all of the major grapheme-phoneme correspondences.

62   The frequency and pace of phonic sessions are important elements in helping pupils to acquire and practise skills. Regular practice, consistently undertaken, helps to reinforce and build on previous learning to secure pupils' understanding. The emphasis must be on pupils acquiring the necessary phonic knowledge and skills they need so that they can read independently. Phonics should continue to be an important part of pupils' language and literacy work as they progress through key stage 1 and beyond.

63   In a minority of schools, approaches to teaching phonics are not consistent. Sometimes, the programme of phonics teaching is not structured clearly enough to help pupils gain knowledge and skills in a progressive way so that pupils often make slow progress. At other times, there are major differences in the teaching approaches from one class to the next class so that pupils lack continuity in their learning of phonics. This lack of consistency is a constraint on progress.

64   Most schools use commercial schemes to help them provide a systematic approach to the teaching of phonics in English. The review showed that, at present, there is no evidence-based research, which demonstrates the superiority of one commercial programme over another. Most schools select the schemes they need to support their work. These schemes help staff to deliver phonics by providing useful notes and guidance and a range of helpful resources. There are few commercial schemes to support the teaching of phonics in Welsh. Many schools rely on materials produced by staff as well as materials provided by the LEA.

65   Successful teaching of phonics recognises that learning needs to be a motivating and an enjoyable learning experience for pupils. Where staff understand and use imaginative, teaching methods, pupils invariably make good progress. For example, some use physical movements to copy letter shapes and sounds and go on a sound hunt in the outdoor play area. This type of approach to phonic work is particularly appealing to boys because it is active; it holds their interest and helps them to make better progress.

66   In a minority of schools, pupils' phonic work is dull and uninspiring. Work often relies on worksheets that do not encourage pupils' interest or engagement in learning. Often, this type of approach prevents pupils from becoming independent in their learning. In some instances, staff are not clear enough about the learning and teaching of phonics. They do not use a suitable variety of ways to engage pupils, such as interactive multi-sensory approaches (explained in the glossary) that help meet pupils' learning needs.

67   Learning is most effective when staff make their expectations of pupils clear to them, and when pupils know how staff will approach each part of their learning, such as using particular routines to develop and practise phonic skills. In addition, it is important that pupils are encouraged and receive regular feedback on their progress. Research has shown that these aspects are important for all learners but they have a particular relevance to the progress and success of boys. For example, when classroom work is structured with clearly identified learning steps and short-term targets, boys are often better able to work independently. A small number of schools, where there is little difference in the standards achieved by boys and girls, give particularly careful attention to these aspects in their work.

68   While many schools begin to introduce pupils to aspects of phonics during their time in nursery, most schools start teaching phonics in reception classes. There is variation in the pace at which schools cover phonic programmes in English during this time. Some schools choose to teach one new sound each week to pupils. Other schools choose to teach five new sounds each week to pupils. Teaching a small number of sounds on a weekly basis can help to ensure pupils have plenty of time to become secure in their knowledge. However, it also means that it can take most of the school year to cover the sounds in the programme and pupils who are ready to progress are unable to do so because of this whole-class approach. Teaching a larger number of sounds each week enables the programme to be covered quickly providing pupils with the skills to begin reading sooner. However, not all pupils are able to cope with the demands of such a brisk programme. Some pupils need more time to consolidate and reinforce their learning.

69   In many cases, when schools choose to teach four or five new sounds each week, staff plan the work so that there is opportunity to reinforce pupils' learning. There are often considerable differences in the way that schools do this. For example, one school uses one session each week to consolidate and reinforce work. Another school uses all of the sessions in every third week for consolidation. Yet another school covers all the required elements of the phonic programme by the end of the autumn term and uses the rest of the school year as consolidation time. Where the practice is most effective, schools pace the work so that it matches most pupils' learning needs. This is vital to pupils' early and continuing success in gaining phonic skills. These schools also build in regular periods of consolidation according to pupils' individual needs to establish firm foundations for learning. Being flexible about the timing of consolidation work is essential to pupils' progress.

70   Successful schools use a range of intervention strategies to support pupils who find the pace of work difficult. In some schools, this intervention takes the form of withdrawing small groups or individual pupils for additional phonic work, often with learning support assistants. In a small number of schools, teaching groups are organised to meet pupils' learning needs, so that some groups of pupils can move on to new work, while other groups spend time reinforcing their learning. These approaches are highly effective when there is careful monitoring of pupils' progress and grouping arrangements are flexible so that teaching meets pupils' needs.

71   Research has shown that learning letter sounds alone is not sufficient. Pupils also need to know how to apply their letter-sound knowledge. Therefore, from an early stage, pupils need to learn about blending the sounds for reading. There is variation

in the point at which schools introduce this skill. In some schools, pupils learn to blend the sounds for reading soon after they have learned the first phonemes. In other schools, blending comes later when pupils are well into learning the phonic programme. Generally, there is benefit to pupils when they are able to blend sounds quickly from an early stage, because this skill helps them to tackle unfamiliar words.

72   Where pupils are learning to read in either Welsh or English, when it is not their first language, schools need to consider carefully the pace of learning phonics. In these schools, there may be a slower start to the pace of learning phonics, to take account of pupils' existing language skills. While it is important that schools consider the learning and teaching of phonics within the context in which they operate, inspection evidence indicates that many schools could accelerate the pace of phonics teaching. Many pupils may benefit from learning up to five phonemes each week as well as being introduced to the blending of sounds more quickly.

73   Many schools include daily sessions on phonic teaching. The time spent on phonics teaching varies from around 10 minutes to up to 40 minutes. Generally, in the sessions where learning is most successful, work on phonics lasts around 15-20 minutes and staff take careful account of pupils' levels of concentration and engagement. In the most effective schools, staff skilfully integrate phonics with work on other aspects of language. Integrating language work is important so that pupils do not gain phonic skills in isolation from other areas of literacy. This is an important recurring finding from the review of literature.

74   In Welsh and English, as pupils learn phonemes, so too should they gain a store of words that they recognise by sight, which will help them read quickly and fluently. This is particularly important in learning to read in English because not all words are phonetically regular. In English, the irregular words are often referred to as 'tricky or 'key' words' and include some of the most common words that pupils encounter in reading such as 'and', 'the' and 'of'. Many schools identify a bank of words that they expect pupils to learn at particular stages through word recognition. This useful approach adds another strategy to the reading programme.

75   In the most effective practice, staff link work on phonics with work on developing writing and spelling skills. Critically, there is a keen emphasis on the reversibility of skills, for example, learning to blend phonemes for reading and segment phonemes for spelling. When staff teach handwriting and focus on the correct formation of letters, they help to reinforce the phoneme-grapheme correspondence (explained in the glossary). Together, this type of work ensures pupils have a secure understanding of the way that language works.

The characteristics of effective learning and teaching of phonics include:

✓ staff knowledge about the principles which underpin the content and sequence of phonic work;

✓ clear learning objectives, which are shared with pupils and focus on the gaining of phonic knowledge and skills;

✓ short, brisk teaching sessions in language and literacy learning;

✓ imaginative, interactive teaching approaches;

✓ high expectations of what pupils can achieve;

✓ attention to pupils' enunciation and pronunciation of sounds;

✓ teaching the skill of blending sounds together;

✓ sessions that begin with a recap of previous work to secure a firm basis for learning;

✓ regular opportunities to repeat work to ensure pupils consolidate their learning;

✓ phonic work linked to writing and spelling;

✓ a stimulating mix of resources and play activities to gain and maintain pupils' interest;

✓ multi-sensory approaches to cater for different learning styles;

✓ positive encouragement and feedback to pupils; and

✓ skilful organisation and management of sessions using effective support from learning support assistants.

77 Inspection evidence shows that the attention that schools give to learning phonics in the teaching of Welsh as a second language is variable. Often, there is a greater focus on other reading strategies. In particular, there is usually a strong emphasis on the 'look and say' approach to reading where pupils learn to recognise words and phrases. This finding is surprising since Welsh is a phonically regular language. Learning phonics may help pupils to read and write more quickly because they can gain the skills they need to help them make better progress. The review of literature rightly highlights the dangers of placing undue emphasis on decoding skills for pupils operating in a second language. However, the findings also strongly support work on phonics because it accelerates the word recognition and spelling skills of both first and second language learners. The implications are clear: all schools should give attention to phonics in teaching Welsh as a second language. Importantly, the work should take place alongside other activities, which promote vocabulary building and comprehension.

78 The challenge for schools is to balance the different demands noted above so that pupils enjoy and are actively engaged in phonic work and make fast but secure progress in their phonic knowledge, understanding and skills.

The role of assessment in supporting the development of early reading skills

79   Assessment plays a key role in supporting the development of early reading skills. Where there is effective practice, schools track pupils' progress carefully and give attention to pupils' performance and progress across the four areas of listening and speaking, reading and writing.

80   Effective use of assessment supports pupils' learning and goes beyond collecting information, keeping examples of work and administering tests. Assessment of pupils' learning should identify strengths and areas for development. Where practice is less effective, there are weaknesses in using assessment to support learning and meet pupils' learning needs. Often there is not enough regular and systematic assessment of pupils' developing phonological and phonemic awareness as well as their phonic knowledge.

81   Assessment systems need to be purposeful and used regularly, providing information to help staff to match new work to pupils' learning needs as well as analyse pupils' progress over time. Importantly, assessment information should help staff to know when to intervene to help pupils make better and faster progress. In the most effective practice, staff act quickly on this information, so that pupils have time to consolidate and secure their learning and catch up before the gap between them and their peers widens.

      The characteristics of effective assessment practice include:

      ✓ straightforward, consistent systems that are used regularly throughout the school;

      ✓ giving attention to the four areas of listening and speaking, reading and writing;

      ✓ gaining information that identifies the early reading skills that pupils have already achieved;

      ✓ using information to determine accurately the next stage of teaching in order to meet pupils' learning needs;

      ✓ tracking the progress of all pupils;

      ✓ revising teaching programmes so that pupils' progress is not constrained by gaps in coverage or a lack of continuity in their learning; and

      ✓ using the information to inform the composition of teaching groups to avoid limiting pupils' progress by a too fast or too slow pace of learning.

82   Schools use a range of assessment systems. Generally, the most effective approaches are straightforward and comprehensive enough to provide specific information about pupils' skills, such as their ability to hear and blend phonemes, but avoid being overly burdensome. These systems help staff to provide parents with informative reports on their child's achievements as well as advise them on supporting their child's learning.

Partnership with parents

83   Parents prepare children for reading long before they start school. For example, they read stories, rhymes, labels and signs to their children, encourage them to look at pictures and share books together. Many parents also continue to support their children when they start school by sharing books and listening to them read.

84   However, there are pupils who do not begin their learning with these advantages. In some schools, pupils have benefited greatly from programmes provided by the Basic Skills Agency, such as 'Language and Play' (LAP), which supports early language development in a play-focused context. Other initiatives, such as 'Book bags' for babies and their parents also support a strong start in language development and help foster an interest in books. These initiatives contribute well to pupils' early language and literacy skills by providing opportunities for children and parents to enjoy and share stories.

85   Parents continue to play an important role when their children begin school. Most schools value parents' support and contribution to developing pupils' reading skills. Many schools hold meetings and workshops to explain to parents how they teach reading and how parents can help their child. Many schools provide a range of written information for parents. Staff also encourage parental interest in reading activities, provide events such as book fairs and highlight the benefits of visiting the local library. Most Welsh-medium schools provide some support for non-Welsh speaking parents of pupils learning Welsh as a first language so that these parents can help their child learning a different language.

86   Many schools use notebooks for teachers and parents to exchange day-to-day comments about pupils' reading. Sometimes helpful instructions are included about the sharing of books as well as advice on how to determine the best time to read together. Guidance such as 'Find a quiet part of your home', 'Give regular praise and encouragement', 'Don't be anxious if your child has difficulty' helps parents to provide a suitable domestic and social context for reading. A small number of schools go further by helping parents understand how children acquire reading skills and know more about what to do when sharing books with their child. For example, these schools provide examples of the type of questions parents can ask their child after they have shared a book or explain how their child can become more confident at using pictures to help to understand the content of the story.

87   In a few cases, schools provide opportunities for parents to observe teachers working with pupils on developing reading skills. In these instances, feedback from parents has been very positive. Parents feel more able to support their child because they have a clearer understanding of how their child is learning to read.

The characteristics of effective partnerships with parents include:

✓ recognising the important role that parents play in their child's learning;

✓ providing opportunities for parents and their children to benefit from language and literacy programmes;

✓ providing information to parents on how reading is taught in the school; and

✓ maintaining a regular dialogue with parents, which strengthens the partnership and helps to keep parents informed about their child's progress.

88 In some schools, staff have found that when parents gain a better insight into the learning and teaching of reading, this also results in parents wanting to know more about other subject areas, so that they can better support all areas of their child's learning.

The importance of leadership and management

89   Inspection evidence shows that improving standards in all areas of education depends vitally on the quality of leadership and management. A key feature of high performing schools is the way that leaders and managers work well together, tackle low and inconsistent performance as well as drive forward improvements to raise standards. Generally, the teaching of reading is no exception.

90   In many schools, there is good leadership and management. Leaders and managers play a key role in building a whole-school commitment to achieving good standards of reading. They take responsibility for ensuring consistency in curriculum planning and in the teaching of reading. Improving standards of language and literacy are often current or have been recent high priorities in school development planning.

91   In a small minority of schools, leaders and managers are not effective enough in making certain there is good learning and teaching of reading. Sometimes, they do not know enough about the development of early reading skills, which makes it difficult for them to improve learning and teaching. In some cases, where different staff have responsibility for the under-fives and Welsh or English throughout the school, they do not know enough about each other's work. In other cases, leaders do not monitor the learning and teaching of Welsh or English closely enough to ensure there is consistency in the teaching of reading throughout the school. In other examples, links between the nursery school and the receiving primary school are not good enough. This adversely affects the way that these schools can plan for continuity and progression in pupils' learning of early reading skills.

The characteristics of effective leadership and management include:

✓ very sound knowledge of the learning and teaching of early reading skills by key staff;

✓ the direct involvement of the headteacher, which gives status to work in the school and ensures its priority in improving standards;

✓ a well-informed overview of work on reading maintained by senior managers, which helps to ensure consistency in teaching approaches;

✓ improving standards of language and literacy as regular school priorities in improvement planning;

✓ the setting of high expectations for pupils' achievement, expressed as challenging individual, class and whole school targets;

✓ strong links with the early years settings that pupils have previously attended so that approaches to the teaching of reading are as consistent as possible;

✓ the use of a wide range of intervention strategies that have a proven track record so that pupils can be helped to catch up with their peers;

✓ good deployment of support staff so that they make a valuable contribution to supporting pupils;

✓ ensuring staff receive regular and relevant up-to-date training;

✓ using and evaluating resources effectively, including commercially produced materials and ICT, so that they are fit for purpose; and

✓ frequent monitoring and thorough evaluation to make certain that the learning and teaching of reading are as good as they can be.

92   In a small number of schools, a key member of staff has become a 'champion' for developing reading, which has significantly advanced the work. In some schools, this person is the Welsh or English subject leader or the leader of the early years. In other schools, the 'champion' is the headteacher or special needs co-ordinator. Leading work with passion, energy and skill, they contribute to the highest quality and standards of work. Staff respect and value their colleague for their exceptionally high level of expertise. As skilled practitioners, they demonstrate very high-quality teaching combined with up-to-date knowledge of research and developments into the teaching of reading. Providing relevant training for newly qualified and established staff and inspiring colleagues by their dynamic leadership, knowledge and commitment are significant features of their work.

Appendix 1

A review of the literature on approaches to the use of phonics, including synthetic phonics, in the teaching of reading in primary schools and early years settings

Final report for Estyn
March 2006

Viv Edwards
Naz Rassool

The context for the present study

For the last 40 years, various approaches to the teaching of reading have vied in popularity. Earlier code-based approaches, favouring explicit instruction of sound-symbol correspondences and rapid whole word recognition, gave way to more holistic, constructivist approaches involving the teaching of sound-letter correspondences in context, as needed. By the late 1980s, however, there was strong support across the English-speaking world for the notion that no one method of teaching reading was suitable for all children: a balanced approach to reading, using a variety of approaches, was required (Spiegel, 1992; Pressley et al., 2002).

In recent years, interest in the teaching of phonics has increased. In the first of several significant developments in the UK, the revised English curriculum (DfES 1993) placed greater emphasis on this approach to the teaching of reading. Pressure grew with the publication of materials on phonics for teachers by the DfES (1999) and an OFSTED (2001) report, which concluded that the teaching of phonics was weak. Attention has focused, in particular, on which phonics approach is most effective, with the findings of two recent longitudinal studies (Johnston and Watson, 2004; Grant, 2005) providing support for synthetic rather than analytic phonics.

The political nature of the debate has become increasingly apparent, with contributions from the Institute of Economic Affairs (Macmillan, 1997) and the emergence of the Reading Reform Foundation as a campaigning group advocating 'synthetic phonics first, fast and only' (Chew, 2005). Tim Collins, Shadow Education Secretary announced in April 2005 that, under a Conservative government, all children in England would learn to read using a synthetic phonics approach. In March 2006, Ruth Kelly, the Education Secretary endorsed the teaching of synthetic phonics following the publication of the *Independent Review of the teaching of reading,* a report prepared by (Rose, 2006).

Methodology

In response to the need to steer a course through an increasingly polarised debate, various national policy makers have commissioned reviews of the relevant research: the National Reading Panel in the US (NRP, 2000; Ehri et al., 2001); the National Inquiry into the Teaching of Literacy in Australia (Australian Government, 2005); and the UK Department for Education and Skills (D*f*ES) (Torgerson et al., 2006). These reviews have either drawn upon or supplemented a range of other syntheses of research most notably by, Cowen, 2003; Purdie and Ellis, 2005; Ellis, 2005. Studies of this kind fall in two main categories: systematic and narrative.

Systematic reviews use explicit methods and pre-specified criteria to identify studies for meta-analysis (a method of statistically summarising quantitative outcomes from a range of studies). Their aim is to increase the validity of the findings through transparency in both the selection of studies and methods of analysis. Such studies are not, however, without problems. Despite the emphasis of the NRP on scientific rigour, Camilli et al.'s (2003) reanalysis of essentially the same studies resulted in important differences in emphasis and interpretation. Torgerson et al. (2006) attempted to refine further the criteria for selection but, in the process, were unable to answer several of their research questions because so few studies met the strict

criteria. In addition, meta-analyses, by definition, focus on quantitative research, which many writers believe oversimplifies the highly complex world of the classroom. Solity (2003), for instance, points out that 70 per cent of studies reviewed by Ehri et al. (2001) involved fewer than 20 hours instruction and approximately 75 per cent of interventions were by a researcher or person other than the classroom teacher; he draws attention to the dangers of generalising from these experimental studies to real life classrooms.

Most literature reviews, however, take a more narrative approach, reporting on studies undertaken from a range of theoretical positions, both qualitative and quantitative (see, for instance, Australian Government, 2005; Purdie and Ellis, 2005; Ellis, 2005). While narrative reviews also have inherent weaknesses, including bias in both the selection of studies and their interpretation (Torgerson et al., 2006: 15), the broad spectrum of issues identified in the Estyn brief were addressed in this way. The approach we have adopted thus meets the recommendations of the International Reading Association (IRA) (2002: 235) on the evaluation of research:

No single study ever establishes a program or practice as effective. Moreover, it is the convergence of evidence from a variety of study designs that is ultimately scientifically convincing. When evaluating studies and claims of evidence, educators must not determine whether the study is qualitative or quantitative in nature, but rather if the study meets the standards of scientific research. That is, does it involve "rigorous and systematic empirical inquiry that is data-based" (Bogdan and Biklen (1992: 43).

The research brief and concerns identified in existing reviews have influenced the framing of the issues in this report. Electronic searches helped to identify potential gaps and update existing reviews. These searches used five main online sources (the British Education Index, ERIC, the Australian Education Index, *Research on phonics and phonemics* on the National Literacy Trust website[1] and the resources database on the National Centre for Language and Literacy website[2]). Publications, which appeared between 2000 and 2005, formed the focus of attention; however, earlier publications that illuminate debates that are more recent have been included, as necessary. Abstracts were screened for relevance. Because of the short period available for this work, it was not always possible to locate full versions of the selected publications, particularly those published in the US and Australia. In these cases, we have needed to rely on secondary sources.

In the rest of this report, we will attempt to answer a number of questions of fundamental importance for teachers, including:

1   What is the relationship between phonological and phonemic awareness and success in learning to read?
2   Is systematic phonics teaching more effective than unsystematic phonics teaching or no phonics teaching at all?
3   Is synthetic phonics instruction more effective than analytic phonics?
4   What is the relative importance of phonics in the teaching of reading?
5   Is phonics teaching effective for children with learning difficulties?

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[1] www.literacytrust.org.uk
[2] www.ncll.org.uk

6   What are the implications of phonics teaching for bilingual children?
7   Can phonics teaching be successfully integrated into play activities?
8   Which resources are most useful in the teaching of phonics in classrooms?

What is the relationship between phonological and phonemic awareness and success in learning to read?

Research within the tradition of cognitive and developmental psychology raises important questions about the nature of the relationship between phonological awareness, phonemic awareness and success in learning to read.

There is little common understanding, however, of either of these concepts. Anthony and Lonigan (2004), for instance, identify four different ways in which phonological awareness is used. Goswami and Bryant (1990) regard phonemic awareness as concerning individual phonemes, with phonological awareness as a global term also incorporating features such as rhyme and syllable awareness. In this view, phonemic awareness does not represent a discrete state but a sequence of development from shallow to deep sensitivity (Stanovich, 1993; Ball, 1991) with children tending to work from larger units such as words and sentences, to small units such as phonemes and syllables. Ball (1991) refers to phonemic awareness as the ability to recognise that the spoken word is made up of individual sounds. Both *phonemic* and *phonological awareness,* however, differ from *phonics,* which is concerned with the relation between letters and sounds in written words (Stahl, 1992).

Notwithstanding problems of definition, phonological awareness and phonemic awareness are regarded as important cognitive skills underpinning literacy. It is generally accepted, for instance, that children who do well in phoneme awareness tests are at an advantage in learning to read (Snowling, 2000).

Phonological awareness

Phonological awareness is usually understood as the ability to distinguish features of speech, such as syllables and phonemes; it is developed through verbal communication, including songs and nursery rhymes. During the 1990s, phonological awareness emerged from various research studies as the best predictor of the ease of early reading acquisition (see, for instance, Stanovich, 1993) and as a necessary but not sufficient condition for learning to read (Adams, 1990).

A number of recent studies explore the contribution of phonological awareness to the process of learning to read and spell (see, for instance, Palmer, 2000; Passenger et al., 2000; Wood, 2002; Blaiklock, 2004; Stainthorp & Hughes, 2004). It is believed that improvements in children's reading are mediated by letter knowledge and general language competence (Nation and Snowling, 2004), as well as home language environment (Foy and Mann, 2003). Conversely, problems encountered with word reading, and later literacy difficulties, are related to underlying difficulties in children's phonological processing ability (Bowey et al., 2005; Most et al., 2000).

Attention also focuses on which aspects of phonological awareness are important for reading acquisition. Passenger et al. (2000) argue that early phonological memory

plays an important part in the development of decoding strategies needed in later reading. According to Carroll et al. (2003) and Duncan et al. (2000), children tend to develop syllable and rime awareness before phoneme awareness; development progresses from global to segmental phonological awareness. Moreover, phonological processing ability explains significant differences between good and poor readers. Deficits, it is argued, can be remedied through instructional programmes and this ultimately affects positively on reading and spelling acquisition.

There is disagreement about possible causal links between rhyme awareness and orthographic rime analogy, on the one hand, and the development of early reading skills, on the other. Goswami (1999; 2001) makes the case for a causal relationship. Savage (2001), in contrast, argues that the nature of the relationship between phonological rhyme awareness and reading remains controversial and that significant doubt remains regarding the nature and relevance of analogy in early reading. Castles and Coltheart (2004) also maintain that the causal link between phonological awareness and reading and spelling ability has not yet been proven empirically. In their view, phonological awareness must be thought of as one of the many interesting, but not necessarily causally connected, cognitive correlates of reading and spelling achievement.

Phonemic Awareness

As is the case with phonological awareness, whilst it is widely accepted that phonemic awareness plays an important role in literacy development, there is little common understanding of how it is implicated in the learning to read process and how it should be taught (Yopp and Yopp, 2000).

There are several views on the relationship between phonemic awareness and reading development. The first is that phonemic awareness precedes or improves reading (Goswami and Bryant, 1990; Stahl and Murray, 1994; Wagner et al., 1994) and predicts later success in reading and spelling (Lundberg et al., 1980). These views were supported in our review. Lerkkanen (2004) tracked phonemic awareness and reading performance in 85 Finnish children following a phonics-based reading programme in six different schools during their first year. Reading performance at the beginning of the year was found to predict subsequent levels of phonemic awareness, which, in turn, predicted levels of reading towards the end of the year. Ehri et al's (2001) submission to the US National Reading Panel also reported that phonemic awareness had a moderate statistically significant impact on reading and spelling. Word reading and reading comprehension, in particular, benefited. Discussing the limitations of their study, Ehri et al. conclude that phonemic awareness should not be taught in isolation but rather in conjunction with grapheme-phoneme knowledge, and this knowledge should be applied to reading and writing. Castles and Coltheart (2004: 104) who argue that 'it may not be possible for phonemic awareness to be acquired in the absence of instruction on the links between phonemes and graphemes' support these views.

The second hypothesis is that phonemic awareness develops as knowledge of the alphabetic system and spellings evolve (Ehri, 1989; Stahl and Murray, 1994). In this regard, Ehri et al. (2001) report contradictory findings: some of the studies they reviewed provided support for the impact of phonemic awareness on reading and

spelling ability; others supported the view that children acquire phonemic awareness in the process of learning to read and spell, without explicit teaching. Phonemic awareness thus may be a consequence of learning to read as opposed to being a causal factor in its development (Morais, 1991).

The third hypothesis is that the relationship between phonemic awareness and reading competence is mutually supportive: awareness of phonemes facilitates reading, which, in turn, improves phonemic awareness (Ellis and Large, 1988; Lundberg 1988; Stanovich, 1986; Wagner et al., 1994). The studies we reviewed offered no evidence either confirming or refuting this position.

NRP (2000) identifies the following skills as elements in phonemic awareness:

- phoneme *isolation* (recognition of individual sounds in a word: /g/ in "go");

- phoneme *identification* (common sound in different words: /b/ in boy, bike, bell)

- phoneme *categorization* (recognizing sounds in sequence: bus, bun, rug)

- phoneme *blending* (listening to series of separate spoken sounds and blending them: /g//o/ = go)

- phoneme *segmentation* (tapping out/counting the sounds in a word: /g/ /o/ = go, which is two sounds)

- phoneme *deletion* (recognising what word remains when a specified phoneme is deleted: smile is "mile" without the /s/).

Phonemic awareness is a prerequisite to the development of the alphabetic principle – that units of sound map on to units of print – essential for children's progress in becoming skilled readers (Share, 1995). The general view is that there are long-term benefits in focusing on phonemic awareness in reading programmes during the first year (Lerkkanen et al., 2004; NRP, 2000).

The weight of evidence suggests, however, that phonemic awareness should be embedded in what is happening in the classroom rather than taught as a discrete activity. Various researchers address the question of how the development of phonemic awareness is best supported in the classroom. Ukrainetz et al.'s (2000) qualitative classroom study focuses on teaching phonemic awareness through conversations embedded in meaningful textual activity. They found that classroom instruction led to gains in phonemic awareness compared to the no-treatment control group and for a subgroup of children with lower literacy levels. Geudens et al. (2004) similarly emphasize the importance of developing phonemic awareness within a more informal literate environment such as within the context of informal print-related experiences. Ehri et al. (2001) argue that, while phoneme awareness contributes significantly to reading and spelling development, children need to develop a wider range of skills, for example, storybook reading, print awareness, letter naming and writing, vocabulary and print awareness, to become competent readers and writers. Goswami (1999) also draws attention to the need for rich language environment

where vocabulary skills and the ability to reflect on phonological differences and similarities are encouraged.

Is systematic phonics teaching more effective than unsystematic phonics teaching or no phonics teaching at all?

Given the polarity of the debate on reading instruction, it is not surprising that considerable attention has been directed at whether it is more effective to teach sound-letter relations systematically as a discrete activity or to develop children's awareness of the relationships between graphemes and phonemes in more holistic, constructivist ways, or whether it is necessary to teach phonics at all. Attempts to answer this question devote a great deal of discussion to the selection of studies and methods of analysis.

In an analysis for the US National Reading Panel (NRP) of 38 peer-reviewed experimental and quasi-experimental researches undertaken since 1970, Ehri et al. (2001) offer evidence for the relative effectiveness of reading instruction using systematic phonics, unsystematic phonics instruction, and approaches where no phonics element was included. The analysis offers support for the conclusions of earlier researchers (see, for instance, Chall, 1967; Bond and Dykstra, 1967; Pflaum et al., 1980; Adams, 1990) that children exposed to systematic phonics instruction make faster progress than those exposed to unsystematic or no phonics instruction. Systematic phonics was found to be effective in a range of teaching situations – tutoring, small groups and whole class. Its impact was greatest when it began before the children learned to read independently.

The NRP conclusions and recommendations, however, have been the subject of considerable controversy (Garan, 2002; Allington, 2002; Meyer, 2004). In a re-examination of essentially the same evidence, Camilli et al. (2003)[3] argued that both the methodology and the procedures used by NRP for the meta-analysis were flawed and came to rather different conclusions: while the effect for systematic phonics remained substantial, it was nonetheless smaller than the effect reported by the NRP. Of particular note is that systematic language activities and individual tutoring were found to have effect sizes similar to systematic phonics; and when systematic phonics instruction was combined with language activities and tutoring, the effect of phonics alone was tripled. Based on this new analysis, they recommend that there is no evidence for the exclusive use of any one approach.

The most recent meta-analysis, undertaken by Torgerson et al. (2006), also attempted to improve upon the methodology and procedures used by Ehri et al. (2001). For instance, they limited the study to randomized controlled trials (RCTs), the only method that ensures that selection bias is eliminated at baseline. Twenty RCTs were identified of which one (Johnston and Watson, 2004, experiment 2) was UK-based. Using these more stringent selection criteria, they found that systematic phonics teaching was associated with better progress in reading *accuracy* across all ability levels. However, there was little evidence for the effect of systematic phonics on reading *comprehension* or spelling. The authors acknowledge that the small

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[3] These researchers used 37 of the NRP studies (one was not considered because it lacked a 'no treatment' control group) and added three further studies, which fitted the selection criteria for the NRP but had not been included.

number of studies included in their meta-analysis meant that there was often insufficient evidence on which to base firm conclusions.

Nonetheless, they conclude that:

- Since there is evidence that systematic phonics teaching benefits children's reading accuracy, it should be part of every literacy teacher's repertoire and a routine part of literacy teaching, in a judicious balance with other elements.

- Teachers who already use systematic phonics in their teaching should continue to do so; teachers who do not should add systematic phonics to their routine practices. (p.49)

The focus of the studies reviewed in all three meta-analyses was on comparisons between systematic and other approaches to phonics teaching. Many other studies, in contrast, explore a broader range of issues. Juel and Minden-Cupp (2000), for instance, sought to establish which instructional strategies were best suited to teaching first grade classes and conclude that children need differential instruction; this, in turn, requires teachers who are knowledgeable about different instructional approaches. White (2005) reports findings, which suggest that analogy-based phonics instruction can be effective for low and normally achieving Grade 2 children when taught systematically and strategically by classroom teachers as part of a balanced literacy programme. Jennings (2000) provides a practitioner's perspective on a phonics instruction programme focused on poor readers in Year 5. Based on the raised levels in reading ability of children in this study, she proposes that children in key stages 2, 3 and 4 would benefit from ongoing teaching of phonics.

The additional studies reviewed here provide support for the findings of earlier syntheses of research that the teaching of phonics is beneficial at different levels of schooling and to learners of different levels of ability in reading and writing. A consistent theme, however, is the need to integrate phonics teaching into normal programmes of study, thus allowing for explicit phonics instruction as well as the ability to use contextual experiences (Morrow and Tracey, 1997). While the support for systematic phonics teaching is very strong, it is not, however, universal. In her synthesis of key research studies including the review of research undertaken by Beard (1999) for the DfEE to establish whether empirical evidence exists to justify the greater emphasis on phonics in the National Literacy Strategy, Wyse (2000), for instance, concludes that evidence supporting the explicit teaching of phonics remains inconclusive.

Is synthetic phonics instruction more effective than analytic phonics?

While the balance of evidence clearly supports the position that systematic phonics instruction is beneficial, the question remains as to which form this instruction should take. NRP (2000) outlines the following examples:

- **Synthetic phonics.** Letters are converted into phonemes and the phonemes blended to form words. For example, children are taught to: break a word like *pad* into the graphemes or letters used to spell it; pronounce each of the sounds associated with the letters in turn (p, æ, d); and blend these sounds together to

form a word. In writing, the process is reversed: children are taught to say the word; segment it into its component, sounds saying each in turn; and write the grapheme for each sound in turn to produce *pad.*

- **Analytic phonics:** Children's attention is drawn to sound-letter relations only after words have been identified**.** For example, children may be asked to identify the sound shared in a set of words such as *pad, pig, Pat* and *pin*. When they write, children are encouraged to make use of inferential learning: after identifying that the first sound in *pad* is the same as in *pig, Pat* and *pin, they* deduce that the first grapheme in *pad* must be <p>.

- **Phonics through spelling**: Sounds are transformed into letters for writing words.

- **Phonics in context:** Sound-letter correspondences are used in conjunction with context cues to identify unfamiliar words.

- **Analogy phonics**: Parts of written words already known are used to identify new words.

The main focus for the current UK debate on phonics, however, is on the relative merits of analytic and synthetic phonics. The first suggestion that synthetic phonics enables children to make faster progress than analytic phonics appears to date back to Chall's (1987) review of the research literature on learning to read. While the main thrust of the ongoing debate is on systematic versus unsystematic phonics teaching, the synthetic-analytic dichotomy has continued to attract the attention of both UK and US researchers. Ehri et al.'s (2001) meta-analysis found that synthetic phonics and larger-unit systematic phonics programs produced a similar advantage. Several writers, however, propose that synthetic phonics is more beneficial in the case of groups considered to be at risk of reading failure. The more general literature concerning these learners is considered below in the discussion of children with learning difficulties.

The findings, which have attracted most attention, both nationally and internationally, arise from longitudinal research conducted in Clackmannanshire (Johnston and Watson 2004; Johnston and Watson, 2005a; Johnston and Watson, 2005b) involving 300 children who were assigned to one of three 16-week training programmes soon after entry to the first year of formal schooling. Children were taught for 20 minutes a day using (a) synthetic phonics; or (b) analytic phonics; or (c) analytic phonics in association with phonemic awareness training. The reported gains were significant. At the end of this initial period, the reading age of the children who had received synthetic phonics was seven months ahead of children in the other two groups; they were also spelling about seven months in advance of their chronological age, and could read irregular words better than the other groups. They were the only group that could spell by analogy. The initial gains in reading had increased six fold by the end of the seventh year of primary school; the gains in spelling had increased from seven months to three years six months ahead of chronological age.

Ellis (2006), however, raises a wide range of concerns in relation to the interpretation of the Clackmannanshire study. In particular, she draws attention to the fact that media attention has focused on some aspects of what took place and not others.

Thus the public debate has been largely silent on the fact that children made much smaller gains in comprehension than decoding; that they did not become more engaged and committed readers; and that they were exposed not only to phonics but also to a rich learning environment, which included story-building activities, listening to stories, talking, reasoning and writing. Nor is there reference to the exceptionally high quality of staff development and planning for the project, all factors which may have influenced the outcomes. She also draws attention to some methodological issues.

The original experiment was conceived as a controlled trial to compare different methods of teaching phonics. It was not designed, as has often been portrayed in the media, to show the effectiveness of phonics instruction over other methods of teaching reading. Not only do other parallel interventions make it impossible to do this, but also the researchers did not collect the range of data or conduct the sorts of fidelity checks that would be required to address such a question. (p.9)

Torgerson et al. (2006) also raise methodological issues. The first of these concerns the fact that they were able to identify just three randomized control trials, which looked specifically at the effectiveness of the different systematic approaches. On the basis of this very limited data set, they were forced to conclude that there was no evidence for the superiority of either synthetic or analytic phonics. They also point to a flaw in research design. Because the children who received synthetic phonics were in classes which, on average, were considered to be the most 'deprived', there is a possibility that their faster progress can be attributed to a 'regression to the mean', a measurement error where the lowest or highest scorers are likely to be nearer the overall mean of the group when they are tested for a second time.

The findings of the Clackmannanshire study are being used to justify a range of interventions for which the authors make no claim. The Reading Reform Foundation, for instance, advocates 'synthetic phonics first, fast and only'. Torgerson et al. (2006:55–6) challenge the premises which underpin this stance. Some children will already have begun to read before starting school; others learn to read with very little phonics instruction. In both instances, the notion of synthetic phonics 'first' would appear to be impractical. On the question of 'fast' the authors argue that the evidence shows that synthetic phonics *can* be taught fast but not that it *should* be taught in this way. Similarly, there is no evidence to support the proposition that synthetic phonics in the very early stages should be taught to the exclusion of other methods.

What is the relative importance of phonics in the teaching of reading?

In spite of the gains of the phonics lobby in recent years, the weight of opinion among interest groups and policy makers appears to be more strongly in favour of a balanced approach, incorporating both the constructivist strategies of whole language and the direct instruction of phonics, than of either whole-language or phonics approaches used in isolation (Song and Miskel, 2002; Smith, 2003). The growing literature designed to support teachers and parents in the use of a balanced approach (see, for instance, Aihara et al., 2000; Cooper, 2000; Starrett, 2000; Thogmartin, 2000) provides further evidence for the prevalence of these views.

Much of the current UK debate focuses on the desirability of systematic phonics teaching as a discrete activity. Growing numbers of researchers, however, have explored ways in which phonics teaching can be integrated into a whole-language approach. In a study of an award-winning elementary school, Lundstrom (2000), for instance, discusses the fine balance between the two approaches required for effective reading instruction. Dahl and Scharer (2000), for their part, report how children in eight first-grade whole-language classrooms gained in ability to decode and encode words, with teachers responding to the needs of individual learners within the context of meaningful reading and writing activities. The studies start from the position that a balanced approach is preferable; their focus is therefore on *how* the teacher puts this approach into practice in the classroom.

There is also quantitative evidence for the superiority of a balanced approach, particularly in the context of children with learning disabilities. Swanson and Hoskyn's (1998) meta-analysis of 180 intervention studies indicates that a combined model including elements of both direct instruction and strategy instruction results in the highest effect size. Vaughn et al.'s (2000) synthesis of research argues in a similar vein for the integration of bottom-up and top-down instruction.

Increasing attention is being paid to what precisely constitutes a balanced approach. It would be simplistic to suggest, for instance, that children should be exposed to equal amounts of time on constructivist and direct teaching. The consensus view (NRP, 2000; Ehri et al., 2001; Westwood, 2003) would seem to be that phonics approaches are of greatest value in the early stages of teaching. Rasinski and Padak (2004: 93), for instance, point out:

While it may be appealing to think that 30 minutes devoted to word decoding and phonics balances against an equal amount of time devoted to guided reading, this may not produce the optimum results that are hoped for. In sixth grade, for example, it may be wise to give additional weighting to guided reading and less weighting to decoding and phonics, so that perhaps 50 minutes per day is given to guided reading while 10 minutes is spent focused on decoding or phonics. Both guided reading and decoding are being taught; however, appropriate balance in the intermediate and middle grades may require greater emphasis on negotiating meaning in text.

Is phonics teaching effective for children with learning difficulties?

Attempts to define learning difficulties are fraught with difficulty and have varied considerably over time, giving rise to ambiguity and inconsistency in discussions of student learning (Purdie and Ellis, 2005). In some cases, the focus is on children who fail to meet age-related standards in literacy and, in others, on children with intellectual, physical, social/emotional or multiple disabilities. The terminology employed is similarly confusing: *students with learning difficulties, learning disabilities, special needs, reading disabilities, dyslexia, and students at educational risk.* The discussion, which follows, will make reference both groups of students.

One of the most important findings of the US National Reading Panel was that phonics instruction facilitated reading acquisition for both normally achieving students and students with learning difficulties (Ehri, Nunes, Stahl, and Willows (2001)). These effects were in fact larger among students with learning difficulties. The

Torgerson et al. (2006) review similarly concludes that systematic phonics teaching is of value for both normally developing children and those at risk of reading failure: 'both may benefit and it should be used with both'. A wide range of other experimental and case study research provides further support for this position (see, for instance, Berninger, 2000; Fuchs et al. 2002; Gallaher et al., 2002; Hempenstall, 2002; Joseph and Seery, 2004; Mercer et al., 2000; Vadasy et al., 2002; Wrench, 2002).

Some studies offer evidence for the greater effectiveness of *synthetic* phonics for children with learning difficulties. Hatcher et al. (2004), for instance, report an intervention with 524 children (reducing over time to 410), aged on average four and a half, from 20 classes in 20 different schools. The children were matched on pre-test scores and randomly allocated to one of three interventions or to the control for a period of five terms. While no effects were found for the different teaching programmes for normally developing children, training in phoneme skills produced selective gains in phoneme awareness and reading skills for those identified as being at risk of reading failure.

In a longitudinal survey of 500 children (Reception to Year 6), Grant (2005) also reports significant gains for children taught using synthetic phonics compared with similar schools in the LEA and nationally. These effects are also evident at the lower end of the cohort where the 'tail of underachievement' was virtually eliminated. No details are offered, however, of how the author undertook the statistical analysis; the only version of the report we have been able to locate has not been peer-reviewed and appears on the website of a commercial publisher, which describes itself as a 'world leader in synthetic phonics'.

The success of systematic phonics is widely attributed to the explicit nature of instruction (Moats, 2000; Wrench, 2002) and its potential for establishing the neural pathways associated with phonological awareness and phonics skills – a significant area of deficit for many children experiencing reading difficulty – while the brain is still developing (DeBats, 2002). It is important not to overemphasize the effects of systematic phonics teaching: other variables, however, may also influence student outcomes, including the professional development of teachers (Carlson and Francis, 2002; Bursack et al.), teacher turnover and settings for instruction (Rosenshine, 2002), the length of intervention (Vadasy et al., 2002; Fawcett et al., 2001) and one-to-one interventions (Vadasy et al., 2000).

It is important, however, to consider research on the value of systematic phonics instruction in a broader context. While the overwhelming body of research affirms its usefulness (see, for instance, studies undertaken by Swanson and Hoskyn, 1998, and Vaughn et al., 2000, referred to in the discussion of the relative importance of phonics, above), there is no evidence to suggest that this approach should be used in isolation. Thus, in a wide-ranging review of empirical evidence for effective interventions and teaching practices in relation to students with learning difficulties, Purdie and Ellis (2005: iv) conclude:

Despite the research evidence that some interventions work better than others, no one intervention of approach can address the complex nature of learning difficulties. Because not all students and tasks are the same, teachers must have a full

repertoire of strategies for helping students learn; they must also have a full understanding of how and when to implement each strategy.

What are the implications of phonics teaching for bilingual children?

Any discussion of bilingual readers needs to take into consideration a wide range of linguistic, social and cultural issues: which languages dyads (or multiples) do children use? Which language is dominant? How similar are oral and written representations of the languages? What is the extent of children's exposure to formal schooling for each of the languages in question? If the research design fails to address issues of this kind, the validity and generalisation of the findings are clearly open to question.

The overwhelming majority of studies on approaches to the teaching of phonics are concerned with children learning to read in English. In a Welsh context, however, three other groups of children are of interest: those learning to read in Welsh as a first language, those learning to read in Welsh as a second language and those learning to read in English as a second language.

Various studies suggest that the phonological awareness of bilingual children is superior to that of their monolingual peers (Bruck and Genesee, 1995; Campbell and Sais, 1995; Rubin and Turner, 1989). There is also evidence that phonological awareness is related to the structure of the language. Campbell and Sais (1995), for instance, speculate that the advantage of Italian-English bilinguals on phonemic awareness tasks may be related to the simple phonological structure of Italian. Bruck and Genesee (1995) attribute the superior syllable awareness of English-speaking children learning to read in French – relative to English-speaking children learning to read in English – to the fact that the rules of syllabification are far simpler in French than English. Caravolas and Bruck (1993) explain the superior performance of Czech-speaking over English-speaking children on initial sound isolation tasks in terms of the larger number of complex onset clusters in Czech. It would see that English phonology is more complex in some respects than Panjabi phonology and less complex in others. Stuart-Smith and Martin (1999) report that Panjabi-English six year olds performed equally well on some tests of phonological awareness, but better on English versions of certain tasks and on Panjabi versions of others.

The phonological structure of Welsh differs in significant ways from that of English. Although the numbers of consonants and vowels are both slightly larger in Welsh than in English, the number and complexity of consonant clusters is greater in English than in Welsh. Stress is also more predictable. These differences, however, are smaller than for languages such as Italian and Greek. Welsh arguably holds an intermediate position in a continuum of phonological complexity, so that Welsh speaking children – like those in Stuart-Smith and Martin's (1999) study of Panjabi children – might be expected to perform better on some but not all tests of phonemic awareness.

Another area of interest concerns the extent to which phonological awareness in the first language facilitates leaning to read in the second. Durgunoglu et al. (1993), Durgunoglu (1998) and Comeau et al. (1999) all offer evidence which suggests that

phonological awareness in the child's first language is strongly related to reading achievement in the second language and vice versa. Building on the work of these researchers, Loizou and Stuart (2003) examine the effect of learning to read in Greek and English on phonological awareness skills and, in particular, the phoneme awareness of four different groups of children: monolingual Greeks, monolingual English, English-Greek (of Cypriot heritage in the UK) and Greek-English bilinguals attending an English pre-school in Cyprus. The UK-based children were already being taught to read; the Cyprus-based children were not. While bilingual English-Greek children significantly outperformed the monolingual English-speaking children, the same was not the case for the Greek-English and monolingual Greek-speaking children. The researchers explain this finding in terms of a *bilingual enhancement effect, which* occurs when children's first language is more phonologically complex than the second language. Extrapolating from these findings, it is possible to speculate that English-Welsh bilinguals might perform better on phonemic awareness tests than Welsh-English bilinguals. However, as was mentioned in the discussion above, the relationship between phonemic awareness and reading is complex, and it is conceivable that the UK children's earlier introduction to reading instruction contributed to their greater phonemic awareness.

The differences in the phonological complexity of Welsh and English are relatively small. A more pertinent area for comparison, however, is the relationship between grapheme and phoneme, or sound and symbol. This relationship is considerably more consistent in Welsh. Landerl et al. (1997) suggest that children experience fewer difficulties in phonological processing both when using logographic scripts such as Chinese, where the relationship between sound and print is arbitrary, and with writing systems (such as Finnish or Welsh) where there is a consistent mapping between sound and grapheme. In a discussion of the progress of a Japanese-English bilingual who reads normally in English but is severely dyslexic in English, Wydell and Kondo (2003: 45) suggest that the English writing system, in contrast, demands 'more finely tuned phonological processing during reading'. They attribute the different patterns of reading behaviour to the different organizing principles of the orthography or writing system. Japanese is written using both *kanji* (Chinese characters where the relationship between sound and print tends to be arbitrary) and *katakana*, a syllabic writing system where the relationship between sound and symbol is highly predictable. On the basis of this finding, it is possible to hypothesise fewer problems concerning phonological processes during the reading of Welsh than in the reading of English.

The only comparison of children learning to read in English and Welsh that we have been able to locate provides support for this position. Spencer and Hanley (2004) report a study of children in the first year in English and Welsh medium schools in the same area of North Wales, using similar methods. Those learning to read in Welsh performed better at word recognition and a phoneme-counting task than the English-speaking group. There was, however, no difference between the performance of the two groups in rhyme ability which, the authors speculate, may be because many irregularities at the level of grapheme-phoneme rules in English 'become predictable when one takes into account the pronunciation of the entire rime segment' (p. 13). Also of note is the fact that the Welsh group did not perform as well on a test of receptive vocabulary, possibly because many of the children came from

English-speaking homes. Bearing in mind these differences in receptive ability, the authors argue that the superior reading of the Welsh group is 'all the more striking'.

Welsh-English bilinguals are not, of course the only bilingual children in Welsh schools. While the limited research evidence suggests that the experience of learning to read in Welsh may improve both the levels of phonological awareness and the phonological processing skills of children from English-speaking homes, the same is not necessarily true for newly arrived children who speak languages with a phonological structure less complex than English, or children with experience of writing systems where sound-symbol relationships are either arbitrary or very predictable. Torgerson et al. (2006), for instance, draw attention to the dangers of extrapolating from the findings of their meta-analysis of randomized control trials:

"It is … unclear whether systematic phonics teaching was beneficial to *all* children with different learner characteristics, as for example very few trials included English speakers of other languages…."

The implications are particularly far-reaching for children learning English as an additional language (EAL) who are experiencing difficulties in reading. The research evidence is contradictory. On the one hand, Nag-Arulmani et al. (2003) found that, when seven-year-old children in India experiencing difficulty in reading English, their non-dominant language, received explicit phonological instruction, they made significantly better gains in reading and spelling than the control group. On the other hand, Hutchinson et al. (2003) caution that undue emphasis should not be placed on decoding. In a three-year longitudinal study of 43 monolingual English-speaking and 43 learners of EAL, no significant differences emerged between the two groups on measures of reading accuracy. However, EAL children had lower levels of vocabulary and comprehension. The authors highlight the importance of paying attention to comprehension as well as decoding skills:

'A child with good decoding skills may give the impression of having good reading skills and, as a consequence, poor comprehension skills may not be identified. As children with poor language skills progress onto texts that challenge decoding ability, the storyline with the text is likely to go beyond their level of understanding…Failure to provide the necessary language support in the early years of education may lead to a poor-get-poorer pattern of reading comprehension achievement for many children learning EAL.' (p. 30)

Stuart (2004) offers support for this position in a longitudinal study of 101 inner-city seven-year-olds, 85 of whom were second language learners. Although early phoneme awareness and phonics training were found to accelerate the word recognition and spelling skills of both first and second language learners, they had no influence on the development of comprehension in the second language learners. She concludes:

'It might be prudent to err on the side of caution when teaching ESL children: that is, devise ways of fostering their L2 oral language comprehension and explicitly focus on reading comprehension as well as phonics'. (p.33)

The findings of Denton et al. (2004) from a study of Spanish-dominant bilinguals in the USA point in a similar direction. Children who received systematic phonics instruction in grades two to five over a period of 10 weeks made significant progress in word identification but not in word attack or comprehension when compared with their untutored peers. Using qualitative methods, Araujo's (2002) study of ESL kindergartners in a full-day Portuguese-English bilingual program also offers support for a balanced approach, emphasizing both phonics and the construction of meaning from texts.

The situation of children learning EAL in many ways mirrors that of children learning Welsh as a second language. The implications are clear: attention to phonics should not take place in isolation from activities, which promote vocabulary building, meaning making and comprehension.

Can phonics teaching be successfully integrated into play activities?

There is a broad consensus that the most effective approaches to promoting phonological and phonemic awareness and systematic phonics instruction are embedded in meaningful and enjoyable learning situations. Goswami (2001:19) points to the essential role of 'rhyming games, language play and instructional attempts to show children larger patterns in the spelling system of English'. Ukrainetz et al. (2000) and Geudens et al. (2004) emphasize the importance of developing phonemic awareness within a more informal literate environment. Scully and Roberts, (2002) provide a theory-and research-based argument for the value of play in literacy instruction in the primary grades, with examples of the ways teachers can create more playful phonics. Many other writers explore opportunities for incorporating phonics in play based learning situations. Campbell (2001) discusses the potential of interactive story reading. Flett and Conderman (2002), Jongsma (2000) and Schiller (2000) offer suggestions for a wide range of activities to develop phonemic awareness, from finger play to tongue twisters and from 'I Spy' games using initial sounds of words to phoneme deletion games. Several authors also highlight opportunities for phonics teaching through children's literature and poetry (Jongsma, 2000; Ediger, 2000; Opitz, 2000; Rosen, 2003).

Most discussions of play approaches to phonics instruction appear in practitioner journals and are based on classroom experience and the writers' knowledge of the theoretical underpinnings for play approaches rather than on research. There are, however, a small number of research-based studies. Joseph (2000, 2002), for instance, explores how the use of word boxes and word sorts increased students' word identification and spelling skills.

Studies, which discuss the use of Information and Communication Technology (ICT), overlap to some extent with books and articles, which examine the use of play. The NRP (2000) concludes that computers are effective in teaching phonemic awareness. Bertelsen et al. (2003) similarly focus on the value of ICT in providing practice opportunities, particularly for students who seem unmotivated to learn. Brunn (2002) describes the use of graphic organizers to help students understand difficult concepts about literacy, including aspects of phonics instruction. Underwood (2000) presents evidence of the ways in which multimedia can be used both to develop sub-skills (using an Integrated Learning System) and to develop free reading

(using a talking book). While acknowledging the value of computer software in boosting the recognition of letter combinations, Kingham and Blackmore (2003) suggest we should not lose sight of the role of the teacher: improvement in accuracy was more rapid when computer-based instruction was supplemented with teacher instruction. McKenna (2002) discusses seven implications for phonics software derived from research into phonics instruction.

Which resources are most useful in the teaching of phonics in classrooms?

A search of the National Centre for Language and Literacy database of children's books and learning resources (www.ncll.org.uk) revealed more than 20 different series incorporating phonics. Publishers are clearly keen to respond to the perceived needs of teachers and increased levels of interest in phonics, with growing interest shown in specifically synthetic approaches, as indicated by a comment posted on the TES staffroom forum on 7 February 2006:

Various UK phonics-based reading programmes receive attention in the literature. Some of these are linked to commercial interests. Other writers, however, have no apparent commercial interests. Newbury (2000) describes her experiences of using *The Phonics Handbook* by Sue Lloyd (Jolly Learning, 2000). MacKay and Cowling (2004) describe the use of *Toe by Toe*, a highly structured reading manual that uses a phonics-based method to teach basic literacy skills to learners of all ages, in schools and prisons. Wirth (2001), an LEA literacy adviser, discusses the usefulness of Phonographix, a US phonics programme and the UK Jolly Phonics in a small-scale project involving schools in Gloucestershire. Both approaches 'fulfilled the criteria for structured, pacy and systematic teaching introducing all 44 phonemes quickly'. Dias and Juniper (2002) also describe the use of *Phonographix,* in this instance in providing additional literacy support in Bristol schools. Winthorpe (2000) explains how the *Progression in Phonics* pack, produced by the National Literacy Strategy, can be used in practice. All of these accounts are written by practitioners keen to promote phonics approaches.

Writing before the current wave of interest in synthetic phonics, Palmer (2000) expressed concern about claims that commercially produced reading schemes teach phonics. She advises that reading schemes need to be researched in relation to working memory development; the emphasis should be on those that 'accelerate progress to phonological use' (p.552). We share her concern in relation to commercial resources more widely. Other than the practitioner accounts described above, we could find no independent research on the effectiveness of the different programmes or resources – synthetic or otherwise. We therefore recommend that publishers' claims be interpreted with caution.

Implications for teachers

The research evidence is sometimes contradictory and often limited. It can therefore offer only indications as to best practice. Nonetheless, there is sufficient consensus for us to be able to suggest tentative answers to the questions, which frame this review of the literature.

The relationship between phonological and phonemic awareness and success in learning to read

There is disagreement both about the definition of these cognitive skills and the precise nature of their relationship with early reading development. While some researchers argue for a causal relationship, others simply consider phonological awareness as one of the many interesting cognitive correlates of reading and spelling achievement. There is a similar lack of clarity as to how precisely phonemic awareness is implicated in the learning to read process. There is, however, no doubt that phonemic awareness is a prerequisite for the development of the alphabetic principle, which is of fundamental importance for children's progress as readers. There is also broad agreement that there are long-term benefits in focusing on phonemic awareness in reading programmes during the early stages (Lerkkanen et al., 2004; NRP, 2000). The weight of evidence suggests that phonemic awareness is best taught within a naturalistic environment rather than as a discrete activity (Ukrainetz et al., 2000; Ehri et al. (2001); Goswami, 2001; Geudens et al., 2004).

Systematic versus unsystematic phonics teaching or no phonics teaching at all

Opinions concerning the importance of systematic phonics teaching vary considerably. Ehri et al.'s (2001) meta-analysis provides very persuasive evidence of the superiority of systematic phonics instruction over unsystematic or no phonics instruction and points to the effectiveness of this approach in a range of teaching situations, especially before children learn to read independently. Camilli et al.'s (2003) reanalysis suggest that learning effects are more nuanced. They highlight the finding that systematic language activities and individual tutoring have effect sizes similar to systematic phonics. They also point out that, when systematic phonics instruction was combined with language activities and tutoring, the effect of phonics alone was tripled. For these reasons, they conclude that there is no evidence for the exclusive use of any one approach. Torgerson et al.'s (2006) meta-analysis suggests the need for further caution: although systematic phonics teaching was associated with better progress in reading *accuracy* across all ability levels, there was little evidence for the effect of systematic phonics on reading *comprehension* or spelling.

Putting to one side these reservations, there can be no doubt that systematic phonics teaching is beneficial. A consistent theme, however, is the need to integrate phonics teaching into normal programmes of study, thus allowing for explicit phonics instruction as well as the ability to use contextual experiences.

Synthetic phonics versus analytic phonics

While systematic phonics teaching can take many different forms, the findings of the longitudinal studies of children in Clackmannanshire (Johnston and Watson 2004; 2005a; 2005b) and the lobbying of the campaign group, the Reading Reform Foundation, have had the effect of focusing attention in the UK debate on the relative merits of analytic and synthetic phonics.

The two meta-analyses, which address this question – Ehri et al. (2001), and Torgerson et al. (2006) – provide no evidence for the superiority of either approach.

There is also growing concern that the media reporting of the Clackmannanshire study is providing an unbalanced picture of the findings. The study does not, for instance, provide support for the arguments of the Reading Reform Foundation for 'synthetic phonics first, fast and only'.

Relative importance of phonics in the teaching of reading

While research findings leave little doubt as to the usefulness of systematic phonics instruction, there is also broad agreement that this approach is a *necessary* but not *sufficient condition* for the teaching of reading. The weight of opinion favours a balanced approach, incorporating both constructivist strategies and direct instruction, over either whole-language or phonics approaches used in isolation.

Effectiveness of phonics teaching for children with learning difficulties

The findings of the National Reading Panel (Ehri et al. 2001), the Torgerson et al. (2006) meta-analysis and a wide range of other experimental and case study research suggest that phonics instruction facilitates reading acquisition for both normally achieving students and students with learning difficulties. A small number of studies point to the greater effectiveness of *synthetic* phonics for children with learning difficulties (Hatcher et al., 2004; Grant, 2005).

It is important, however, not to overemphasise the effects of systematic phonics teaching: other variables may also influence student outcomes, including the professional development of teachers, teacher turnover, settings for instruction, the length of intervention and one-to-one interventions. In addition, while the overwhelming body of research affirms the usefulness of systematic phonics, there is no evidence to suggest that this approach should be used in isolation.

Implications of phonics teaching for bilingual children

Three groups of bilingual readers need to be considered in the Welsh context: native speakers of Welsh, children from English-speaking homes receiving Welsh-medium education; and children who are learning English as an additional language.

Extrapolating from international studies, which explore the relationships between phonological and orthographic complexity and rate of literacy acquisition, it is possible to hypothesise that:

1   Welsh-speaking children will perform better on some but not all tests of phonemic awareness;

2   children from English-speaking homes receiving Welsh-medium education will perform better on phonemic awareness tests than children who speak Welsh as a first language; and

3   both groups of children will experience fewer problems concerning phonological processes during the reading of Welsh than in the reading of English.

However, we have only been able to locate evidence which supports the third of these hypotheses: children in the first year at Welsh-medium schools in North Wales, using similar methods, developed word recognition skills more rapidly using the more 'transparent' Welsh writing system than their peers in English-medium schools (Spencer and Hanley, 2004)).

For children learning to read English (or Welsh) as a second language, other considerations come into play. A wide range of studies draw attention to the dangers of placing undue emphasis on decoding skills with children operating in a second language. Although early phoneme awareness and phonics training have been found to accelerate the word recognition and spelling skills of both first and second language learners, comprehension skills are unaffected. The implications are clear: attention to phonics should not take place in isolation from activities, which promote vocabulary building, meaning making and comprehension.

Play approaches to phonics

The most effective approaches to promoting phonological and phonemic awareness and systematic phonics instruction are embedded in meaningful and enjoyable learning situations – interactive story reading, finger play, tongue twisters, 'I Spy' games, phoneme deletion games, children's literature and poetry.

The use of Information and Communication Technology is consistent with play approaches, for instance, by creating motivating opportunities for drill-and-practice, and boosting the recognition of letter combinations. It is important not to overlook the role of the teacher in this process.

Resources for reading

Publishers are clearly keen to respond to the perceived needs of teachers and increased levels of interest in phonics. Various practitioners, some of whom can have clear commercial motivation, enthusiastically promote phonics approaches associated with particular programmes or series. There is, however, no evidence-based research, which demonstrates the superiority of one commercial programme over another.

Appendix 2: Questions for leaders and managers to use in reviewing and improving practice

Improving the learning and teaching of reading can make a real difference to the standards pupils' achieve in Welsh and English as well as in all other areas of the curriculum. The key questions that follow may assist leaders and managers to review and improve this important area of work.

Question 1: How does pupils' language and literacy work make certain that the four strands of language: listening, speaking, reading and writing reinforce each other?

Question 2: How are listening and speaking skills recognised and developed as essential pre-requisites for learning to read?

Question 3: How are phonological and phonemic awareness developed so that pupils have firm foundations for later language learning?

Question 4: How do pupils acquire a range of reading strategies, including phonics, word-recognition and comprehension skills?

Question 5: Is there a systematic phonic programme that is consistently implemented in the school?

Question 6: Is phonics a frequent and regular part of pupils' learning about language and literacy?

Question 7: Is phonics taught at a brisk pace so that pupils can make rapid progress in both learning and using their phonic skills?

Question 8: Do staff use imaginative, interactive teaching approaches that engage pupils' interest and involvement in learning phonics?

Question 9: How do staff take account of the interest and learning needs of boys?

Question 10: How are pupils' positive attitudes to literacy promoted?

Question 11: Do staff use a range of effective intervention strategies so that all pupils make as much progress as they can?

Question 12: Do staff track pupils' progress in reading and use assessment information to inform the planning of new work?

Question 13: Are support staff deployed effectively so that they make a valuable contribution to developing pupils' reading skills?

Question 14: Do all staff receive regular and relevant up-to-date training on the teaching of reading?

Question 15: How are parents informed about approaches to teaching reading and how are they helped to provide as much support and encouragement as possible for their children?

Question 16: Is there frequent monitoring and thorough evaluation to make certain that the learning and teaching of early reading skills are as good as they can be?

Analogy phonics: parts of written words already known are used to identify new words

Analytic phonics: words are split into smaller parts to help with decoding, such as the onset (or initial sound) and the rime (which makes up the remainder of the word or syllable), as in *b-ig: big.*

Cognitive and Developmental Psychology: centres on the mental processes that underlie behaviours including thinking, reasoning, decision-making, motivation and emotion. Cognitive psychology emphasises the cognitive processes involved in literacy development. Knowledge of phonics forms an integral part of this perspective.

Constructivist approach to learning: this approach is grounded in the belief that all learning should be relevant to the situation; teaching should be appropriate for the cognitive ability of the learner; and teaching and learning goals should be consistent. Students should be challenged and encouraged to test their ideas with the ideas of their peers. The role of the teacher in a constructivist teaching environment is that of facilitator.

Grapheme: a written symbol used to represent speech.

Grapheme-phoneme correspondences: the matching of written symbols to sounds.

Grapheme-phoneme knowledge: awareness of the correspondences between letters and sounds.

Graphic knowledge: focuses on learning about word meanings and parts of words from consistent letter patterns.

Look and say: an approach to the teaching of reading which focuses on learning to recognise and remember whole words and phrases.

Meta-analysis: the method of combining the results of two or more randomized control trials statistically, such as plurals and prefixes.

Multi-sensory: learning that includes visual, auditory and kinaesthetic approaches.

Onset: any consonant sounds which come before the vowel in a word e.g. b/ike.

Onset-rime: an approach to teaching phonics in which sounding-out is not used for every letter. Instead, the initial consonant (or onset) is sounded out, followed by the remainder of the word or syllable (rime) e.g. puh-at: pat.

Phoneme: the smallest contrastive unit in the sound system of a language.

Phonemic awareness: a subset of phonological awareness concerning listeners' ability to distinguish the smallest meaningful elements of sound in words.

Phonics: the study of the way in which spellings represent the sounds that makes up words.

Phonics instruction: a set of approaches to the initial teaching of reading and writing, including analogy, analytic and synthetic phonics, which focus on the relationship between letters and sound.

Phonological awareness: the ability to distinguish parts of speech, such as syllables and phonemes.

Phonological memory: the phonological coding of information for temporary storage in short-term memory to be "read off" when mapping units of sound to units of print in word identification.

Phonological processing: the process of identifying phonemes and subsequently identifying the words that the sounds combine to make.

Randomised control trial: an experiment where investigators randomly assign subjects to groups, which receive – or do not receive – one or more interventions.

Regression to the mean: a measurement error where the lowest or highest scorers are likely to be nearer the overall mean of the group when they are tested for a second time.

Rime: the part of a word that includes the vowel sound and any consonants following it, such as 'ing' in spring.

Consonant clusters: this includes two or more letters, such as 'th' or ''sh'.

Syllable: a unit of organisation for a sequence of speech sounds, typically consisting of a nucleus (usually a vowel), sometimes preceded and/or followed by consonants.

Synthetic phonics: children learn to recognize the graphemes, which correspond to the phonemes of English (up to 44 in number depending on your accent). They then sound out each phoneme in the word, e.g. *kuh-ah-tuh: cat.*

Systematic phonics instruction: the teaching of a planned sequence of phonics elements, rather than the highlighting of elements, as they happen to appear in a text.

Systematic review: a review where explicit methods are used to identify, select and include studies fitting a set of pre-specified criteria.

Word segmentation: ability to segment words into constituent sounds.

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