

First edition published in 2016 by Critical Publishing Ltd

This second edition first published in 2022 by Critical Publishing Ltd

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior permission in writing from the publisher.

The authors have made every effort to ensure the accuracy of information contained in this publication, but assume no responsibility for any errors, inaccuracies, inconsistencies and omissions. Likewise every effort has been made to contact copyright holders. If any copyright material has been reproduced unwittingly and without permission the Publisher will gladly receive information enabling them to rectify any error or omission in subsequent editions.

Copyright © 2022 Jonathan Glazzard and Michael Green

British Library Cataloguing in Publication Data

A CIP record for this book is available from the British Library

ISBN: 978-1-914171-62-8

This book is also available in the following e-book formats: EPUB: 978-1-914171-63-5 Adobe ebook reader: 978-1-914171-64-2

The rights of Jonathan Glazzard and Michael Green to be identified as the authors of this work have been asserted by them in accordance with the Copyright, Design and Patents Act 1988.

Cover and text design by Out of House Limited Project management by Newgen Publishing UK Printed and bound in Great Britain by 4edge, Essex

Critical Publishing 3 Connaught Road St Albans AL3 5RX

www.criticalpublishing.com

Printed on FSC accredited paper

CONTENTS

	Meet the authors	iv
	Acknowledgements	iv
	Introduction	1
1.	Using research	2
2.	Developing high expectations of your pupils	30
3.	How children learn	38
4.	Subject and curriculum knowledge	77
5.	Subject knowledge in English	101
6.	Subject knowledge in mathematics	151
7.	Classroom practice	172
8.	Adaptive teaching	213
9.	Assessment	256
10.	Supporting children's behaviour	277
11.	Professional behaviours	312
12.	Becoming an early career teacher	348
	Conclusion	363
	Index	364



MEET THE AUTHORS

Jonathan Glazzard is Professor of Teacher Education and Head of Department for Primary and Childhood Education at Edge Hill University. Jonathan is deeply committed to research which advances social justice. He has published widely on aspects of inclusion and social justice for marginalised groups and his research focuses on special educational needs, inclusion and mental health and well-being in education.



Michael Green is an experienced educational professional and leader, driven by a commitment to improving the life chances of children and young people. Until recently he was one of Her Majesty's Inspectors. Before working for Ofsted he gained extensive and wide-ranging middle and senior leadership experience in a range of educational settings and roles including leading Initial Teacher Education in higher education, working as a government adviser, undertaking international advisory work and holding senior leadership positions within primary schools. He has wide-ranging experience of governance and has previously held several trustee positions. His areas of expertise include primary education, Initial Teacher Education, policy development, English, advising on teacher workload and learning outside the classroom.



ACKNOWLEDGEMENTS

We would like to dedicate this book to all the schools and student teachers with whom we have worked.

INTRODUCTION

The *ITT Core Content Framework* (DfE, 2019) stipulates the minimum content that must be included in a teacher education curriculum. There is a strong emphasis on the psychology of learning, and particularly on understanding the changes that occur in the brain when learning occurs. Some of the language has also changed. For example, the framework uses the term 'adaptive teaching' rather than differentiation and there is a strong emphasis on debunking theories which are not evidence-based.

The recent research reviews by Ofsted into curriculum subjects also provide teachers with comprehensive guidance on different types of subject knowledge. In this book, we emphasise that subject-specific concepts, facts, and principles must be taught through explicit direct instruction. We argue that there is a place for enquiry-based approaches within the curriculum, but we stress that subject content should be taught directly before children undertake enquiry. We also cover some of the insights gained from cognitive science, including distributed practice, schemas, and retrieval.

This book loosely addresses the *ITT Core Content Framework*. We have maintained relevant content from the first edition, and we have added to it to bring it up to date. We have included a short chapter on becoming an early career teacher (ECT) which addresses the recent changes in the statutory induction period. We have included some content from the Ofsted curriculum reviews to bring the subject knowledge chapter up to date.

Learning to be a teacher is a process that continues throughout your teaching career. You cannot learn everything during your Initial Teacher Training. Effective teachers continue to learn, develop, and reflect. Some of the advice that we have included in this book will not meet the needs of every class or every child. However, the strategies that we have outlined will be useful in specific contexts and can be part of your teacher toolkit.

Case studies are included in each chapter so that you can see how to implement some of the ideas in your practice. Links to evidence are included as well as critical questions to support your thinking. Questions to support higher level thinking are also included in the chapters to support the development of critical analysis.

Reference

Department for Education (DfE) (2019) ITT Core Content Framework. London: DfE.



1: USING RESEARCH

TEACHERS' STANDARDS

This chapter addresses the following Teachers' Standards:

Teachers' Standard 8: Fulfil wider professional responsibilities

Teachers must:

* take responsibility for improving teaching through appropriate professional development, responding to advice and feedback from colleagues.

In relation to this standard the term 'professional development' is interpreted broadly and includes teacher engagement with research and scholarship as well as access to courses, training, coaching and mentoring.

PROFESSIONAL LINKS

According to the Department for Education, the 'Learn that' statements in the *ITT Core Content Framework* (DfE, 2019) are informed by the best educational research. In addition, the Education Inspection Framework for schools is underpinned by educational research. This research is available here: www.gov.uk/government/publications/education-inspectionframework-overview-of-research

CHAPTER OBJECTIVES

* What is this chapter about?

In this chapter you will learn about:

- 1. the importance of evidence-based teaching what works and how do we know?
- 2. some of the key research that underpins aspects of teaching.
- * Why is it important?

Effective teaching is underpinned by research findings. Research helps us to understand the effectiveness of different teaching strategies, interventions and ways of working in the classroom. As a teacher it is important that the practices you implement in your classroom are evidence-based and informed by research. As a reflective teacher you have a responsibility to evaluate research and challenge it before applying it in the classroom. Research helps to demonstrate that teaching strategies have an impact and will make a difference to children's learning. Without research it is difficult to establish the effectiveness of particular teaching strategies and you could waste a lot of time implementing strategies which make little or no difference to children's learning.

Research findings can help to shape your educational values because they will help to inform your core beliefs about learning and teaching. During your ITT programme you will be introduced to seminal research findings on aspects of pedagogy such as assessment, feedback and early reading. Seminal research is research which has made a significant and often longstanding contribution to knowledge. It often informs current



In this chapter, some key teaching methods and approaches are examined in relation to the current research to help you position your own teaching around the latest evidence. This chapter will also explore how you might access research and research summaries in order to keep up-to-date in your professional practice.

How to locate research

The starting point for you to access research is your ITT provider library. This may be a physical library which includes educational resources such as books and academic and professional journals. Your provider is also required to provide you with access to an electronic library. This will enable you to access online journals and electronic books as well as other resources such as newspaper articles. You will need to learn how to search electronic databases to help you locate research, and many providers now include this as part of the ITT induction process. You will need to learn which search words might yield the best results and then you will need to narrow the search by selecting various filters. General searches often produce several thousand sources so it is important to be as specific as you can when searching for material so that you can select sources from a narrower range. Table 1.1 includes some useful organisations which produce research.

Name of organisation	URL / web address
Department for Education	www.gov.uk/government/publications
The Sutton Trust	www.suttontrust.com/research/
National Association for Special Educational Needs	www.nasen.org.uk/resources/
The Reading Reform Foundation	www.rrf.org.uk/resources.html
The Joseph Rowntree Foundation	www.jrf.org.uk/publications

Table 1.1 Useful websites where you can access research

In addition to your electronic library, many sources are now freely available on the internet for you to access.

Subject associations and charities or interest groups may provide access to useful research via their individual websites. Google Scholar is also a useful search engine for finding research. It is important to bear in mind that just because something has been published, that alone does not ensure it is quality material. You should be sceptical about material that you access on the web, particularly if it has not been through a process of peer review. Peer review is a process which assures the quality of the research, which usually goes through a process of revision before it is published. When searching through your provider's online library you are well-advised to select the 'peer review' option which filters out any material which has not been subject to this.



As time is precious on any ITT programme you will not be able to read everything and you will not be expected to do so. To save time, many reports (particularly government reports) include an 'executive summary' of the publication at the front and it is usually sufficient to read this. Try to access the summaries of research findings rather than wasting valuable time reading whole studies.

Systematic synthetic phonics

This section demonstrates how you might approach looking at research and how you can use it to inform your practice. Specifically, it evaluates the effectiveness of synthetic phonics compared to analytic phonics. It presents the key research findings and offers a critical appraisal of this research.

During the last decade there has been a political focus which has highlighted the importance of systematic synthetic phonics in securing children's skills in word recognition. Successive governments in England have exerted pressure on schools to teach synthetic phonics and this has been regulated through various inspection frameworks. Additionally, inspections of Initial Teacher Education in England have focused heavily on the extent to which training providers have ensured that all trainee teachers have thorough training in synthetic phonics. Publishers have developed commercial schemes for teaching synthetic phonics and high-profile individuals have developed consultancy work in this area. The political message is clear. Teachers have been told that synthetic phonics is the best way of teaching children to read. However, as critical, reflective teachers it is important to know that what you do in the classroom is substantiated by research evidence. You need to establish that what you are doing is likely to work and you need to be aware of other approaches if one strategy does not work with specific learners. Children are individuals. They learn in different ways and at different rates and one strategy will not necessarily suit all children.

Successive governments in England have, in recent decades, invested heavily in various educational initiatives. However, England lags behind other countries in terms of its performance in international education league tables. For example, in the Progress in International Reading Literacy Study (PIRLS) in 2011 there was a greater proportion of weaker readers in England than in many other high-achieving countries (Mullis et al, 2012). It would appear that the significant political investment has not always had the desired impact in terms of raising educational achievement.

It is important to critically examine the evidence from research findings to establish the effectiveness of different teaching strategies. In relation to the teaching of reading, the discipline of psychology is a good place to look for evidence. Teachers need a secure understanding of psychology to understand child development. Without this, it is difficult to plan for progression in learning or help children overcome misconceptions in their knowledge, skills and understanding. The next sections therefore examine the psychological research on different approaches to phonics before arriving at a synthesis.

Definitions

The term 'synthetic' is taken from the verb 'to synthesise'. Beginning readers are taught grapheme-phoneme correspondences and are taught to *blend* phonemes all through the word right from the outset in order to develop word reading skills (Johnston and Watson,



2007). They are also taught the reverse process of *segmenting* a spoken word into its constituent phonemes. These are then represented as graphemes for spelling. Letter sounds are learned at a rapid pace and the skills of blending and segmenting are taught from the start (Johnston and Watson, 2007). In contrast, analytic phonics introduces blending much later in the process. Children are taught to analyse the common phoneme in a set of words and individual phonemes are not pronounced in isolation (Strickland, 1998).

Evidence for synthetic phonics

The Rose Review in England (Rose, 2006) concluded that:

Having considered a wide range of evidence, the review has concluded that the case for systematic phonic work is overwhelming and much strengthened by a synthetic approach.

(Rose, 2006, para 51, p 20)

In this review, Rose recommended that synthetic phonics 'offers the best route to becoming skilled readers' (p 19) and he argued that teachers should be required to teach synthetic phonics 'first' and 'fast'. This recommendation informed literacy policy in England and the content of Initial Teacher Education courses.

Rose substantiated his claim by drawing on evidence from the Clackmannanshire research in Scotland (Watson and Johnston, 1998). The second experiment examined the performance of three groups of children who received interventions over a ten-week period. Each intervention lasted for 15 minutes twice a week. One group received sight vocabulary training, a second group received intervention in analytic phonics and a third group received intervention in synthetic phonics. The results led the researchers to conclude that synthetic phonics led to better reading, spelling and phonemic awareness gains than the other two approaches (Watson and Johnston, 1998).

A longitudinal study reported by Johnston and Watson (2005) has demonstrated that synthetic phonics is particularly effective for boys. This study reported that both boys and girls demonstrated substantial gains in word reading, spelling and comprehension which were sustained over time when taught through a synthetic phonics approach. However, the gain was larger for boys (Johnston and Watson, 2005). Additionally, the research found that synthetic phonics enabled children from areas of deprivation to overcome social disadvantage by demonstrating gains in reading and spelling which enabled these children to perform above their chronological age (Johnston and Watson, 2005). More recent research also supports these findings. For example, a study by Johnston et al (2011) compared the performance of ten year-old boys and girls who had been taught to read by either synthetic or analytic phonics. The study found that the group taught by synthetic phonics had better spelling, word reading and comprehension than the group taught by analytic phonics. Additionally, the results demonstrated that the boys taught by synthetic phonics had better word reading, spelling and comprehension than the girls who had been taught by the same method.

However, the Clackmannanshire research (experiment 2 specifically) has received considerable criticism in the academic literature (Wyse and Goswami, 2008). The study lacked sufficient rigour in its design to establish whether the synthetic approach is superior to the analytic approach (Wyse and Goswami, 2008). Children in the analytic phonics group were taught fewer letters than children in the synthetic phonics group (Wyse and Styles, 2007) and



the groups were given different amounts of teaching (Wyse and Styles, 2007). Additionally, the research design did not isolate the impact of additional treatment factors which might have contributed to the gains in reading, spelling and phonemic awareness (Ellis and Moss, 2014). For example, factors such as teacher effectiveness; parents' educational attainment; the quality of the literacy environment in the home; remedial help offered outside the intervention; and other reading interventions which operated within the school were not controlled and therefore the evidence is insufficiently robust (Ellis and Moss, 2014). The study failed to report information about the time spent on phonics instruction outside the intervention, time spent on other reading activities and the contexts in which children were exposed to phonics (Ellis and Moss, 2014). Given these serious flaws in the reporting of the research and the design of the study Ellis and Moss concluded that:

The weakness of the research design, including the way the statistical data were analysed and reported, suggest it would be unwise to draw any clear conclusions for pedagogy or policy from this single study.

(Ellis and Moss, **2014**, p 249)

Despite the methodological weaknesses of the Clackmannanshire research, Johnston and Watson (2005) concluded that 'synthetic phonics was a more effective approach to teaching reading, spelling and phonemic awareness than analytic phonics' (p 351). However, as Wyse and Styles (2007, p 39) point out 'it is important that gains are shown for comprehension, not just for decoding and related skills'. In the first experiment the reporting of the comprehension outcomes is ambiguous and in the second experiment the comprehension findings are not reported (Wyse and Styles, 2007). The subsequent longitudinal study published by Johnston and Watson (2005) reported gains in comprehension scores but there was no control group so it is not possible to attribute gains in comprehension to synthetic phonics (Wyse and Styles, 2007). Additionally, comprehension scores during the longitudinal study were assessed using different tests, thus invalidating any results.

Given the serious limitations of the research, it is questionable why Rose (2006) acknowledged the criticisms that were levelled against it but failed to take any of these into account. To launch a policy change on a lack of robust, empirical evidence was both hasty and naïve and not an adequate solution for addressing England's low position in the international literacy league tables.

EVALUATE

How robust is the evidence in support of the use of synthetic phonics? Explain your answer in as much detail as possible.

Evidence for analytic phonics

Analytic phonics is often described as processing text by going from whole to part, rather than part to whole as is the case in synthetic phonics (Moustafa and Maldonado-Colon, 1998). It is a strategy which emphasises the use of larger grain sizes and the use of rime in reading by analogy.



Goswami (2005) has argued that synthetic phonics is highly effective in orthographically consistent languages. However, in languages such as English, which are not orthographically consistent, it is more difficult for children to use smaller grain sizes (ie phonemes) because the inconsistency is greater for smaller grapheme units than for larger grain sizes such as rimes (Goswami, 2005). Most languages use syllables with a simple consonant-vowel (CV) structure. However, in the English language most syllables have the following structures: CVC, CVCC or CCVC (Wyse and Goswami, 2008). In English, one grapheme can have multiple pronunciations, while in many other languages letters are consistently pronounced in the same way. Additionally, in English one phoneme can be represented by different graphemes while in most other languages a phoneme is always spelt in the same way.

The complexities of the English language inevitably mean that teaching phonics through small grain sizes will result in confusion for beginning readers when there is inconsistency in the sounds represented by these units in different words. Additionally, the inconsistencies transfer to spelling when one sound is represented by different graphemes in different words. Goswami (2005) argued that a developmental teaching sequence based on developing rhyming skills helps children to read by analogy and better suits the irregular orthography of English.

Research suggests that children code-switch from small to large grain sizes when learning English depending on the word they are reading (Brown and Deavers, 1999; Goswami et al, 2003). Some words have to be learned as whole units because they have 'no orthographic neighbours' (Goswami, 2005, p 281). Other words, particularly CVC words, have consistent letter-phoneme recoding and the use of small grain sizes is an effective decoding strategy in these cases (Goswami, 2005). Some words contain rimes that are common to other words (*light/fight*) and therefore the use of rimes works particularly well in these cases. This suggests that analytic phonics has an important role to play in learning to read, given the orthographic inconsistencies of the English language.

EVALUATE

How robust is the evidence in support of the use of analytic phonics? Explain your answer in as much detail as possible.

Evaluating the research evidence

According to Torgerson et al, 'There is currently no strong randomised controlled trial evidence that any one form of systematic phonics is more effective than any other' (2006, p 49). Research evidence which is available is insufficient to allow for reliable judgements to be made about the efficiency of different approaches to systematic phonics instruction (Stuart, 2006). In countries where there are one-to-one mappings between letters and sounds (such as in Finland, Greece, Italy and Spain) there is evidence to suggest that synthetic phonics can be extremely effective (Landerl, 2000). However, the phonological complexity of the English language and the inconsistent spelling system mean that there is a need for direct instruction at levels other than the level of the phoneme in order to



produce effective readers (Goswami, 2005; Wyse and Goswami, 2008). The inconsistency of English inhibits the automatic correspondences between graphemes and their phonemes (Goswami, 1999; Seymour et al, 2003) and thus it seems logical to suggest that beginning readers should be taught a range of grain sizes rather than focusing solely on the level of the phoneme.

There is now a considerable body of evidence to suggest that no one method of teaching children to read is superior to any other method (Landerl, 2000; Spencer and Hanley, 2003; Torgerson et al, 2006; Walton et al, 2001) and there is no empirical evidence to justify Rose's recommendation that the teaching of reading in England should rely on synthetic phonics. Much of his evidence was anecdotal (Wyse and Goswami, 2008) rather than empirical, and formulating policy on the basis of anecdotal accounts lacks sufficient rigour to justify its implementation.

Although the evidence on the most effective approach to teaching phonics is inconclusive, there is clear evidence that a systematic approach to phonics produces gains in word reading and spelling (Torgerson et al, 2006) irrespective of whether analytic or synthetic phonics is used. Walton et al (2001) concluded from their research that as long as tuition was systematic, then both approaches (synthetic or analytic) lead to similar gains and this finding is supported by a range of studies (Landerl, 2000; Spencer and Hanley, 2003; Torgerson et al, 2006; Walton et al, 2001).

CHALLENGE

* Taking into account the research evidence presented above, do you think the evidence to support the implementation of a policy for synthetic phonics is sufficiently robust?

APPLY

During your next period of school-based training, specifically observe children in Key Stage 2 who are struggling with the task of decoding print. It is likely that these learners have been taught a programme of synthetic phonics. What approaches are being used to support these learners to develop word recognition skills?

Models of reading development

In order to help you understand the importance of theory in informing educational practice this section examines two models of reading development. Given the current political emphasis on phonics in England, there is a need to examine the theoretical models which underpin reading development in order to establish whether phonics is sufficiently able to produce skilled readers.

The Simple View of Reading

The Simple View of Reading (SVR) was developed by Gough and Tunmer nearly 40 years ago (Gough and Tunmer, 1986). The model proposes that reading ability or reading comprehension (R) is the product of two components: decoding (D) and language comprehension (C). This is often represented by the formula $R = D \times C$. The model suggests that the two components are



independent of each other and that each is necessary for successful reading (Gustafson et al, 2013). Thus, neither decoding nor language comprehension is sufficient in itself to produce skilled and effective reading. The model is represented in Figure 1.1.



Figure 1.1 Simple View of Reading

The SVR as a model of reading development has strong academic support (Aaron, 1997; Catts et al, 2003; Kirby and Savage, 2008; Roberts and Scott, 2006) as well as support from policy makers in England.

The SVR emphasises the distinct role that word recognition and language comprehension make to reading development. Neither component is sufficient in isolation because each component makes a distinct contribution to reading ability (Gustafson et al, 2013). The combination of the two variables is a more effective predictor of reading ability than the contribution that each variable makes in isolation of the other (Gough and Tunmer, 1986; Joshi and Aaron, 2000). Several studies have demonstrated that different skills and abilities contribute to the development of comprehension and decoding, thus supporting their dissociation in reading development (Cutting and Scarborough, 2006; Kendeou et al, 2005, 2007; Muter et al, 2004). However, the assumption that decoding and language comprehension make independent contributions to reading development has been challenged more recently by Tunmer and Chapman (2012) who argued that one component of oral language comprehension (vocabulary) affects decoding.

However, the extent to which decoding and comprehension predict reading ability is dependent upon the level of reading skills. For children struggling as readers, decoding is a better predictor but comprehension is a better predictor to explain variance in reading ability among skilled readers (Hoover and Gough, 1990). The SVR is useful because it explains the variance in reading ability among individuals with reading difficulties. Thus, for individuals who struggle to read words accurately but are able to comprehend text this is due to deficiencies in word recognition (decoding). Children with dyslexia may fall into this quadrant. Some individuals are able to read words accurately and with fluency but they display limited understanding of the text. For these individuals the skill of word recognition (decoding) is established but the skill of comprehension is under-developed. They are described as hyperlexic. Many children with severe reading difficulties struggle in both aspects of word recognition and language comprehension. They can neither read words nor comprehend text. Crucially, the model has direct practical implications for teachers (Kendeou et al, 2009). It enables teachers to assess which skill(s) may be responsible for reading difficulties and



then to determine what type of intervention is necessary to remediate the difficulty (Savage, 2006). This is because the model clearly distinguishes between the skills of word recognition and language comprehension and therefore different approaches to teaching are required to develop each of these skills. Thus, if teachers know the cause of the reading failure, they are able to intervene more effectively. Studies demonstrate that children can perform differently in decoding and comprehension. A poor reader with good comprehension but poor decoding skills (as evidenced in studies by Adlof et al (2006) and Spooner et al (2004)) may benefit from a structured multi-sensory phonic intervention designed to develop automatic graphemephoneme correspondence and blending skills. A child with secure decoding but poor comprehension, as evidenced in several studies (Cain et al, 2005; Nation, 2005; Stothard and Hulme, 1992), may benefit from a structured language intervention programme and increased exposure to oral language through a language development programme and exposure to a communication-rich environment, including opportunities for play, collaboration, speaking and listening. A child who displays poor word recognition and poor comprehension will benefit from structured intervention in both domains. Thus, the SVR supports both assessment and targeted intervention by separating the two fundamental components of reading.

EVALUATE

In what ways is the Simple View of Reading a useful model for teachers? Explain your answer.

CHALLENGE

In what ways could it be argued that the Simple View of Reading over-simplifies the process of learning to read?

Challenging the research evidence

Although the SVR is simple in the sense that it identifies only two components of reading (word recognition and language comprehension), the skills of decoding and comprehension are actually quite complex (Kirby and Savage, 2008; Tunmer and Greaney, 2010). The model thus risks over-simplifying the very complex skill of reading comprehension. The skill of decoding refers to the ability to quickly and with increasing automaticity 'derive a representation of the written, visual stimuli that gives access to adequate retrieval of information from the mental lexicon' (Gustafson et al, 2013, p 293). Thus, the skill of decoding requires the retrieval of semantic information on the word level (Hoover and Gough, 1990). In dual-route models of word decoding, access to word meaning can be gained by phonological decoding or visual-orthographic decoding (Ellis and Young, 1988). As word recognition develops there is a gradual shift from phonological decoding to orthographic decoding (Gustafson et al, 2013) and skilled readers tend to use orthographic strategies rather than the phonological strategy which relies on grapheme-phoneme conversion (Ehri and Wilce, 1987). Additionally, Kirby and Savage (2008) argue that fluency as well as accuracy is important in decoding so this skill also needs to be developed. The danger of the SVR is that the model emphasises decoding as a key reading skill but fails to emphasise the importance of developing the sub-components of decoding which are essential in the development of decoding.



Likewise, the skill of comprehension is complex and can be sub-divided into sub-skills (Kirby and Savage, 2008). Comprehension involves several linguistic domains at the same time (Gustafson et al, 2013), including phonology, semantics, grammar and pragmatics. The SVR fails to recognise the development of linguistic comprehension within each of these domains. It is therefore unsurprising that some researchers have suggested more complex theories which sub-divide decoding and language comprehension into sub-components (for example, Velluntino et al, 2000, 2004).

APPLY

During your next period of school-based training identify learners who fall within each of the different quadrants of the SVR. Identify the specific intervention that each of them needs to improve their reading development.

Ehri's model of reading development

Recent theories of reading development in alphabetic orthographies suggest that a critical stage of development in learning to read is the mastery of the skill of decoding (Stuart et al, 2008). This skill requires beginning readers to understand the relationship between graphemes and phonemes. Ehri's theory of reading development (Ehri, 1992, 1995) proposes four phases in the development of automatic word reading. These phases are termed: *pre-alphabetic; partial alphabetic; full alphabetic and consolidated alphabetic.*

In the pre-alphabetic phase children have not yet understood the relationship between phonemes and graphemes. At this phase their reading is dependent upon visual memory (Stuart et al, 2008). They may be able to read environmental print, especially if it appears with salient visual cues such as logos which use specific colours and fonts (Johnston and Watson, 2007). However, if the visual cues are removed children are generally unable to recognise the word (Johnston et al, 1996). Although there is some evidence to suggest that children use visual cues in words to aid word recognition (Ehri, 1992, 1995; Frith, 1985; Gough, 1993; Seymour and Elder, 1986), some researchers have suggested that the pre-alphabetic phase is not an essential phase in learning to read words (Jackson and Coltheart, 2001; Stuart and Coltheart, 1988).

In the partial alphabetic phase beginning readers are able to identify the initial and final phonemes in spoken words and they are able to make some connections between graphemes and their corresponding phonemes (Stuart et al, 2008). Their attempts at decoding are not always accurate at this phase but they are no longer arbitrary (Stuart et al, 2008). They are unable to decode print systematically throughout a word and they may make logical errors based on interpreting the initial and final phonemes correctly (Johnston and Watson, 2007).

At the full alphabetic stage letters are mapped sequentially onto sounds (Stuart et al, 2008) and therefore children are able to make connections between letters and sounds all the way through a word (Johnston and Watson, 2007). At this phase children have mastered the simple and complex alphabetic code and they are able to read phonetically regular words with accuracy. Once they have decoded a word accurately, children will start to automatically



remember the word because at this phase children are establishing a sight vocabulary at the same time as developing proficiency in the skill of systematically decoding words.

In the consolidated alphabetic phase, children start to decode words on the basis of larger units of sound. These include morphemes, onsets and rimes. At this phase children are successful word readers; their decoding is becoming increasingly accurate and their reading is becoming more automatic and fluent (Stuart et al, 2008).

EVALUATE

How can Ehri's model of reading development inform practice in the classroom?

Evaluating the research evidence

Ehri's model of reading development has practical relevance to teachers. It is a developmental model in that it identifies separate phases within developing the skill of word recognition and specifically blending. Teachers can use the phases to assess which point children have reached within their reading development and they can look to the subsequent phase to identify what skills the child needs to be developing next. Thus, the model can inform both teaching and assessment. The SVR fails to break down the skill of word recognition into distinct sub-phases and therefore is less informative to teachers in relation to how the skill of accurate word recognition develops. Ehri's model is also useful in terms of emphasising the important role that phonics plays in learning to read. The Rose Review (Rose, 2006) emphasised the importance of the alphabetic code as a body of knowledge that all children need to be taught and Ehri's theory of reading development underpins this approach to teaching reading.

CHALLENGE

* What are the limitations of Ehri's model of reading development?

Challenging the research evidence

However, Ehri's model falls somewhat short in neglecting the significant role that oral language comprehension plays in reading development. The SVR explicitly acknowledges that word recognition alone is insufficient to produce good readers. It has been argued that:

Vocabulary is one of the most consistent predictors of reading comprehension: children with good vocabularies understand texts better, and the predictive relationship between vocabulary and reading comprehension increases through the primary grades.

(Snow, 2002 and Torgeson et al, 1997 cited in Stuart et al, 2008, p 64)

Research suggests that although developing the skill of decoding makes the most significant contribution for children with reading difficulties (Gustafson et al, 2013), language comprehension is the most important predictor of reading comprehension for



children with typical reading development (Gustafson et al, 2013; Hoover and Gough, 1990). Given this important finding, it is reasonable to suggest that although Ehri's model might more usefully support children with reading difficulties, it is unlikely to support those readers who are able to read words accurately and fluently but are, nevertheless, still struggling to comprehend text. The strength of the SVR is that it emphasises not only the importance of word recognition in reading development but also the crucial role that oral language comprehension plays in reading comprehension.

APPLY

During your next period of school-based training identify pupils in your class (or within your school) whose reading development appears to have arrested at the pre-alphabetic stage. What specific interventions do these learners need to improve their reading skills?

Synthesis of the research

This section has described two models of reading development. It has explored the strengths and limitations of each model and compared and contrasted the models. Both models are useful in helping teachers to understand how children learn to read. Ehri's model provides a developmental framework to support teachers' understanding of the phases children progress through when developing the skill of word recognition. However, the model neglects the significant role that language comprehension plays in the process of learning to read. The SVR separates the two fundamental skills that contribute to reading comprehension (word recognition and language comprehension). The model usefully informs teachers that different kinds of teaching are necessary to develop each skill and the model helps teachers to understand what types of interventions are necessary to support reading development. However, the model fails to break down each of these skills into smaller sub-skills or phases of development that contribute to both word recognition and language comprehension. Ironically, the model fails to capture the complexity of the process of learning to read.

Given the strength of support for the role of oral language in the development of language comprehension and its subsequent role in reading comprehension, it seems logical to support Rose in arguing the need for practitioners to teach phonics within the context of a broad and rich language curriculum.

Spaced or distributed practice

Spaced or distributed practice is the practice of spacing learning out over time. Subject content is taught and then interspersed with different subject content before being revisited. Evidence suggests that although this approach to curriculum planning makes learning more difficult (EEF, 2021), it is likely to lead to long-term retention of subject content. This is because it challenges children to revisit information which has been almost forgotten, thus activating the long-term memory. Long-term retention of knowledge is supported if learning is spread out, with gaps in between to allow forgetting. This 'is one of the most general and robust effects from across the entire history of experimental research on learning and memory' (Bjork and Bjork, 2011, p 59).



The impact of social deprivation

The National Education Union (NEU, 2021) has produced a synthesis of key research. This is summarised below.

- # Poverty is the strongest statistical predictor of how well a child will achieve at school.
- By Year 6, children living in poverty are often over nine months behind their peers in reading, writing and mathematics.
- Children living in poverty are four times more likely to be permanently excluded from school than their peers.
- * Single parents are more likely to experience poverty than those families with both parents.
- * People from Black and ethnic minority groups are also more likely to live in poverty.

Rosenshine's principles of effective instruction

Rosenshine synthesised 40 years of research to develop 10 principles of effective teaching. These are summarised below.

- 1. Begin a lesson with a short review of previous learning.
- 2. Present new material in small steps, with student practice after each step.
- **5.** Ask a large number of questions and check the responses of all students.
- 4. Provide models for problem solving and worked examples.
- 5. Guide student practice.
- 6. Check for student understanding.
- 7. Obtain a high success rate.
- 8. Provide scaffolds for difficult tasks.
- 9. Require and monitor independent practice.
- 10. Engage students in weekly and monthly review.

(Rosenshine, 2010, 2012)

Differentiation

According to Davis and Florian (2004) there is little evidence to support the use of distinctive teaching approaches for children with specific learning difficulties although responding to individual differences is crucial. In-class differentiation, using different tasks for specific students or different resources, has generally not been shown to have much impact on pupils' attainment (Ofsted, 2019). In Scheerens and Bosker's (1997) meta-analysis of school effectiveness research, differentiation showed a null or a very weak relationship with students' outcomes. Similarly, Hattie (2009) found the effect of differentiation to be among the weakest in his seminal work on visible learning.



Beliefs about intelligence

The idea that intelligence is fixed is now outdated. Research that demonstrates the plasticity of the brain supports the belief that intellectual ability can be enhanced and developed through learning (Sternberg, 2005). Individuals who believe that intelligence can be developed through effort outperform those with a fixed mindset. In contrast, those with fixed mindsets view intelligence as fixed and not something which can be developed. Research demonstrates that children who have a growth mindset achieve higher than their peers with a fixed mindset (Aronson et al, 2001; Blackwell et al, 2007). Research demonstrates that *'at every socioeconomic level, those who hold more of a growth mindset consistently outperform those who do not'* (Claro et al, 2016, p 8667).

Assessment

There is consistent evidence that formative assessment increases students' achievement (Hayward and Spencer, 2010; Webb and Jones, 2009). The work of Black and Wiliam (1998) has also been influential in highlighting the benefits of formative assessment:

There is a body of firm evidence that formative assessment is an essential component of classroom work and that its development can raise standards of achievement. We know of no other way of raising standards for which such a strong prima facie case can be made.

(Black and Wiliam, 1998, p 12)

Critique of learning styles

A belief in the value of learning styles theory is evidently persistent, despite the prominence of critiques of this theory. One study found that an overwhelming majority of teachers across the world agreed that individuals learn better when they receive information in their preferred modality (Howard-Jones, 2014). Some writers have attempted to account for the popularity of learning style theory (Riener and Willingham, 2010), but there is clear psychological evidence that there are no benefits for learning from attempting to present information to learners in their preferred learning style (Geake, 2008; Howard-Jones, 2014; Pashler et al, 2009; Riener and Willingham, 2010). Coffield (2012) argues that 'In short, the research field of learning styles is theoretically incoherent and conceptually confused' (p 220). There is an absence of an agreed theory or agreed technical vocabulary to underpin this theory and that essentially weakens the theory.

Supporters of learning style theory often present approaches to learning in the form of a pyramid which shows the percentages of information retained if content is introduced to students in different ways, for example, visually, auditorily or kinaesthetically. However, learning occurs when cognitive thinking is promoted (Willingham, 2008), cognitive thinking can be achieved by being 'active' or 'passive' and therefore this reduces the validity of learning style theory.

Research broadly supports direct instruction (Kirschner et al, 2006), rather than learners discovering things for themselves. Although motivation can be fostered by kinaesthetic approaches if teachers want students to learn new knowledge, ideas or strategies, they



need to use direct teaching approaches. This research challenges constructivist learning theory, which partly underpins learning style theory.

It has been argued that research in the field of learning styles is incoherent and conceptually flawed (Coffield et al, 2004a, 2004b). This can be illustrated by the sheer number of dichotomies which the different models present and the overlap between them. Stan Ivie (2009) highlights how John Dewey rejected binaries (either/or thinking) which create false dichotomies and that in reality sharp distinctions do not exist, for example, activists/reflectors.

There is no agreed technical vocabulary and no agreed theory to underpin the dichotomies (Coffield et al, 2004a, 2004b). Additionally, learning style theory has become commercialised in recent times. The growth of the learning styles industry in recent years (Coffield et al, 2004a, 2004b) and the excessive number of models available serve to reduce the credibility of learning style theory. Coffield (2012) argues that the existence of 70 learning style instruments demonstrates the disorganised nature of this field of enquiry. In the absence of an agreed model or agreed vocabulary, this creates confusion among educators who are responsible for meeting the needs of their students.

Discovery learning

Now that you understand how to evaluate research findings systematically, try to read, evaluate and challenge the following specific piece of research on *discovery learning*. Discovery learning is an approach through which learners discover key ideas for themselves without exposure to direct teaching methods. Enthusiasm for discovery learning is not supported by research evidence, which broadly favours direct approaches to teaching (Kirschner et al, 2006). Although learners do need to build new understanding on what they already know, if teachers want students to learn new ideas, knowledge or skills, they need to use direct teaching approaches.

READ

Using your ITT provider electronic library, access the following research:

Kirschner, P A, Sweller, J, and Clark, R E (2006) Why Minimal Guidance during Instruction Does Not Work: An Analysis of the Failure of Constructivist, Discovery, Problem-based, Experiential, and Inquiry-based Teaching. Educational Psychologist, 41(2): 75–86.

EVALUATE

- * What arguments do the authors put forward to support the claims they have made?
- * Do the authors consider sufficiently contrasting perspectives? Explain your answer.
- * To what extent is this research supported or contested by constructivist and behaviourist theories of learning?

CHALLENGE

- * Are the arguments put forward by the authors sufficiently supported by evidence from experimental studies?
- * Are there any weaknesses in the assertions that have been made?



When you are undertaking school-based training, divide your learners into two groups. Teach an aspect of the curriculum through experiential learning to one group. Teach the same aspect of the curriculum through direct teaching to the other group. Assess the learning of both groups on the same day after one week. Which method do you think was the most effective and why? What other factors might have contributed to the results?

Grouping

Evidence on the effects of grouping by ability suggests that it makes very little difference to student achievement (Higgins et al, 2013). Although it is claimed that ability grouping can allow teachers to target pupils' specific needs, it can also create an exaggerated sense of withingroup homogeneity and between-group heterogeneity in the teacher's mind (Stipek, 2010). This can result in teachers failing to respond to children's individual needs by assuming that all learners within a group have the same needs. Ability grouping can also result in teachers going too fast with the high-ability groups and too slow with those in low-ability groups.

READ

* Access the Sutton Trust toolkit using the following link:

https://educationendowmentfoundation.org.uk/toolkit Download the full version of the toolkit. Open the document and find the section on 'setting or streaming'.

EVALUATE

* How robust is the evidence that is presented? Explain your answer.

CHALLENGE

* Search for research that challenges the findings in the toolkit.

APPLY

During your school-based training observe classes taught in both ability and mixed-ability groups. Which approach do you think was most effective and why?

Reading for pleasure

The Department for Education (DfE) is currently promoting the importance of reading for pleasure. Given the significant political focus on phonics in recent years, it would not be surprising if some schools focused less on encouraging children to read for pleasure. Evidence suggests that the majority of children in England reported that they do enjoy reading (Clark and Rumbold, 2006). In 2010, 22 per cent of children reported that they enjoyed reading very much; 27 per cent said they enjoyed it quite a lot; 39 per cent said they enjoyed it quite a bit, and 12 per cent reported that they did not enjoy reading at all (Clark, 2011). Compared to international evidence, children in England report that they read less frequently for



pleasure outside of school than children in many other countries (Twist et al, 2007). Evidence consistently demonstrates that children enjoy reading less as they get older (Clark and Douglas 2011; Clark and Osborne, 2008; Topping, 2010). However, there is evidence to suggest that while the frequency with which young people read declines with age, the length of time for which they read when they do read increases with age (Clark, 2011). Several studies have indicated that boys enjoy reading less than girls and that children from working-class backgrounds read less for enjoyment than children from middle and upper social classes (Clark and Douglas, 2011; Clark and Rumbold, 2006). Additionally, evidence has shown children from Asian backgrounds have more positive attitudes to reading and read more frequently than children from White, mixed or Black backgrounds (Clark and Douglas, 2011).

Research increasingly indicates that a growing number of children do not read for pleasure (Clark and Rumbold, 2006). Between 2000 and 2009, on average across Organisation for Economic Co-operation and Development (OECD) countries the percentage of children who report reading for enjoyment daily dropped by five percentage points (OECD, 2010). This is supported by evidence from PIRLS 2006 (Twist et al, 2007), which found that attitudes towards reading had declined among children.

The DfE published a report in 2012 entitled *Research Evidence on Reading for Pleasure* (DfE, 2012), which summarised key research findings. These included the following.

- Reading for pleasure enhances educational achievement and attainment as well as personal development (Clark and Rumbold, 2006).
- There is a positive relationship between frequency and enjoyment of reading and attainment (Clark, 2011; Clark and Douglas, 2011).
- Reading enjoyment has a greater impact on children's educational success than their family's socioeconomic background (OECD, 2002).
- * There is a positive link between positive dispositions towards reading and achieving highly on reading assessments (Twist et al, 2007).
- Regularly reading stories or novels outside of school is associated with higher achievement in reading assessments (Mullis et al, 2007; PISA, 2009).
- International evidence also supports these findings; US research reports that independent reading is the best predictor of reading achievement (Anderson et al, 1988).
- Reading for pleasure has a positive impact on children's social and emotional development (Clark and Rumbold, 2006).
- Other benefits of reading for pleasure include: text comprehension and knowledge of grammar, positive reading attitudes, pleasure in reading in later life, increased general knowledge (Clark and Rumbold, 2006).

(research cited in DfE, 2012, p 4)

READ

Read the DfE review on reading for pleasure using the following link: www.gov.uk/government/uploads/system/uploads/attachment_data/file/284286/reading_for_ pleasure.pdf.



* Does the research evidence appear to be sufficiently robust? Explain your answer.

CHALLENGE

* Select one finding from this review of research and find counterevidence that challenges it.

APPLY

During your next period of school-based training, find out what your school is doing to promote reading for pleasure. Make a note of the strategies that the school has implemented.

Deployment of support staff

The largest and most in-depth study ever carried out on the use and impact of teaching assistant (TA) support in everyday classroom environments is the multi-method DISS project. Unlike previous studies, it linked what TAs actually do in classrooms to effects on pupil progress. The DISS project critically examined the relationship between TA support and the academic progress of 8200 pupils. It put forward a coherent explanation for the *negative relationship* found on the basis of careful analyses of multiple forms of data collected in classrooms.

READ

Read the DISS project. You can find it using the following link: https://maximisingtas.co.uk/assets/content/disss1w123r.pdf.

EVALUATE

Is the evidence presented in the research sufficiently robust? Explain your findings.

CHALLENGE

* Find some research which offers a contrasting perspective to that which is offered in the DISS project.

APPLY

During your school-based training, observe carefully how teaching assistants are deployed across school during lessons. Carry out a learning walk which focuses on teaching assistant deployment across the school. Note down instances of effective practice where teaching assistants were positively impacting on pupils' progress and independence. Were there any examples of ineffective practice?

Assessment, marking and feedback

Black and Wiliam (1998) identified the following practices as those which yield the largest gains in achievement for learners:

use of classroom discussions, classroom tasks and homework to determine the current state of student learning/understanding, with action taken to improve learning/correct misunderstandings;