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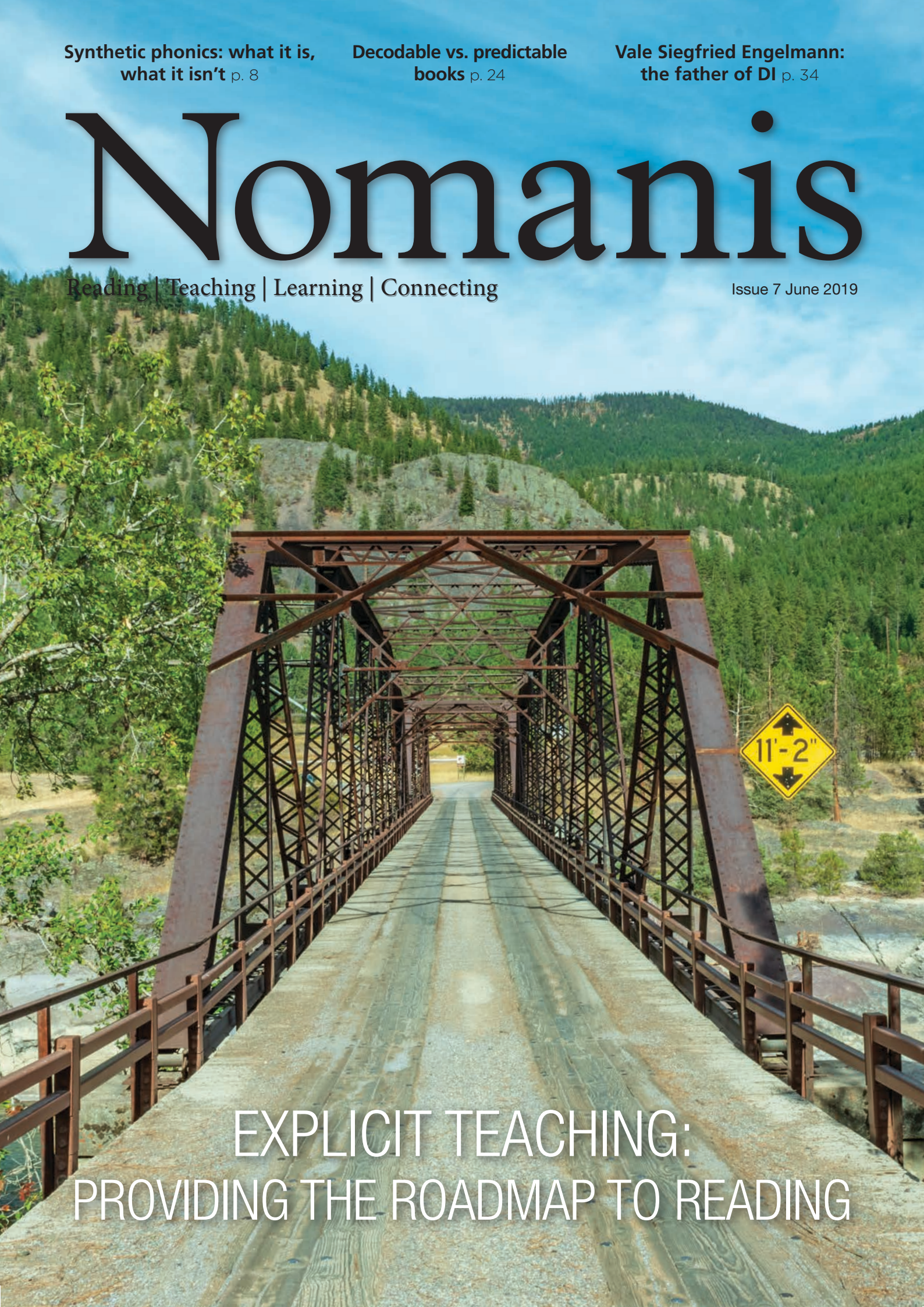
Nomanis

Reading | Teaching | Learning | Connecting

Issue 7 June 2019



EXPLICIT TEACHING: PROVIDING THE ROADMAP TO READING

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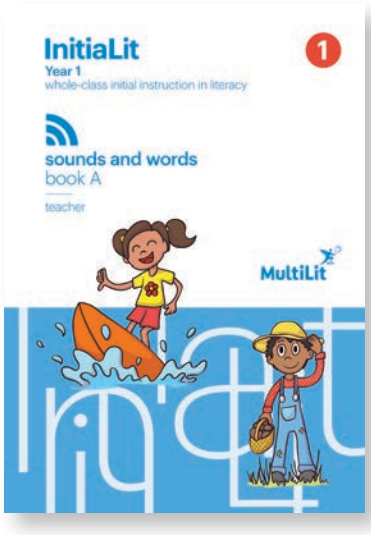

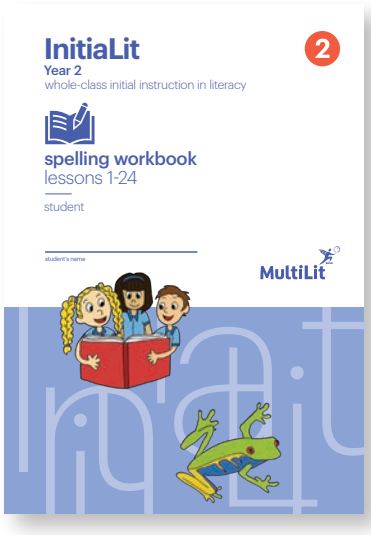

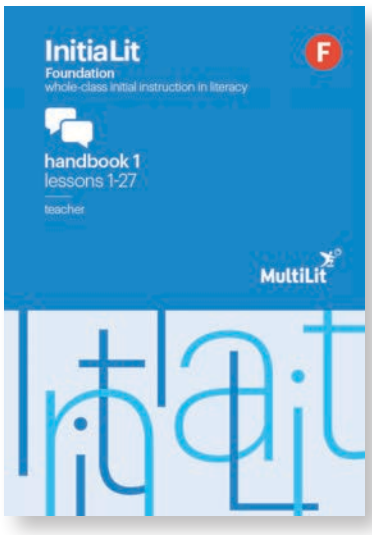

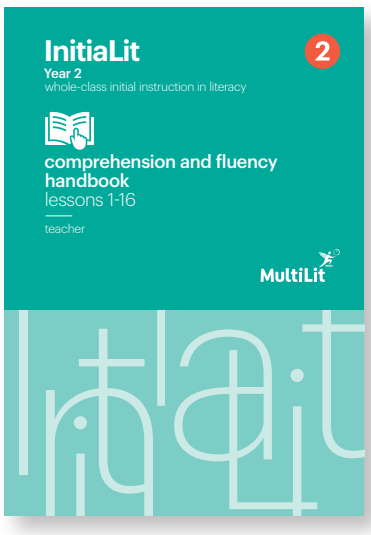

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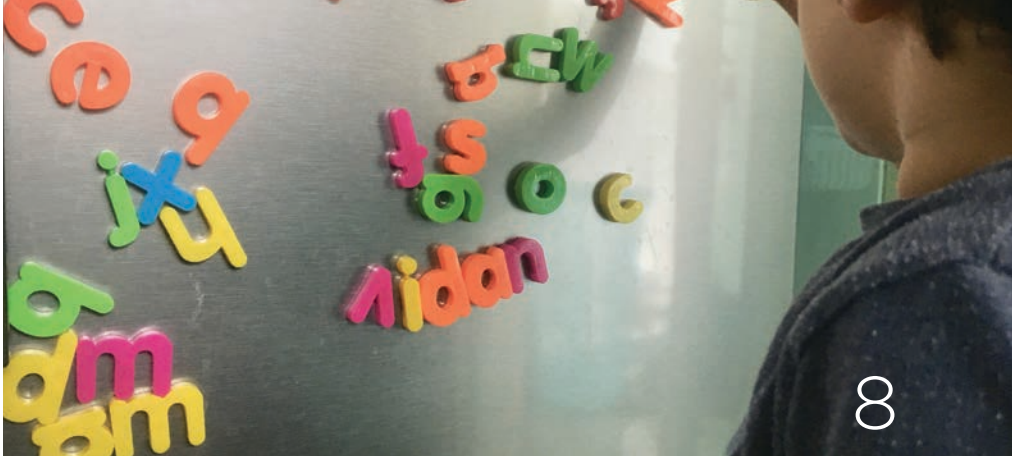

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When two tribes go to war …

Kevin Wheldall

"When two tribes go to war
A point is all that you can score"
"Two Tribes", Frankie Goes to Hollywood (1984)

"Two Tribes" was written in the early '80s during a particularly tense period of the Cold War when many of us feared for the lives of our children. We forget history at our peril. Today, two different tribes battle it out it in the so-called 'reading wars' and again our main fear is for the fate of our children. So, who are the two tribes in the reading wars and how do they differ?

In the first tribe stand those aligned with the findings of cognitive science research on reading and related skills; psychologists, speech pathologists, and special educators, in the main. They favour a 'bottom up' approach to reading instruction including the learning of letter sound correspondences by overt phonics instruction.

The second tribe comprises mainly regular educators; teachers and educationists in schools, state and federal education departments and (perhaps especially) academics in university teacher education departments. They typically subscribe to a 'constructivist' approach to learning and favour a more 'top down' approach to teaching reading.

In the popular debate, a shorthand characterisation is frequently employed: phonics versus whole language. This simplistic characterisation does no favours to either tribe. It has never been a matter of either/or.

The so-called Simple View of Reading to which most reading researchers subscribe posits that reading comprehension, the aim of all reading instruction, is the product of decoding and language comprehension.

To understand written text, we need to be able to translate the black squiggles on the page into words and sentences. But this facility would be completely useless if we did not understand the meaning of the words and sentences.

For example, with a small amount of instruction and a little practice in pronunciation, I should be able to read aloud (badly perhaps) simple text written in a phonetically regular language such as Italian. Unfortunately, without a great deal more instruction and practice, I would have no idea what I was saying. Similarly, while I might be able to learn some basic spoken Italian by attempting to use it on holiday in Italy, I would not be able to read or write in Italian without having first learned how the alphabetic code is deployed in written Italian.

A common summary of what reading instruction entails is known as the Five Big Ideas: phonemic awareness, phonics, fluency, vocabulary and comprehension. Putting phonics to one side for the moment, I sincerely doubt whether the two tribes would disagree too much about the importance of the remaining four.

We all agree on the importance of phonemic awareness, the ability to break spoken words up into their component sounds and to blend orally component sounds into words. Similarly, who could possibly disagree with the proposition

that being able to read quickly, accurately and with expression (i.e., fluently) is a long-term goal of reading instruction.

And, of course, no one would dispute the idea that to understand written text properly, a good working vocabulary together with the oral comprehension skills of sentence comprehension and general background knowledge are essential.

So why are the two tribes fighting at all? The essential discord rests on the role of phonics instruction and the form of instruction deployed. This has changed subtly over the last few decades.

Originally, advocates of whole language argued that phonics was unnecessary to learn to read and could even be damaging to children's literacy development. Supporters of the importance of phonics were accused of being obsessed with phonics to the exclusion of anything else.

Over time, as the scientific evidence in favour of the efficacy of phonics instruction became overwhelming, the whole language movement relaunched themselves as being in favour of 'balanced literacy'. All five Big Ideas were important including phonics (which they now claimed was already being taught in most schools), but more as a method of last resort.

Moreover, phonics instruction (where necessary) should occur naturally during 'real' reading activities involving quality children's literature and certainly should not be taught explicitly and systematically.

Why would the whole language/ balanced literacy tribe continue to cling to this view? One of their arguments is that many children learn to read regardless of the form of instruction they receive. If we know that many children will learn to read without explicit phonics instruction, then why do we need to offer it to all students in their first two years of schooling?

To understand written text, we need to be able to translate the black squiggles on the page into words and sentences

The answer is the same argument as that for universal vaccination of children against measles, mumps and rubella. We know that a sizeable minority of children will need systematic and explicit phonics instruction if they are going to learn to read and spell well, but we simply do not know ahead of time just which ones they will be.

We also know that some children seem to really fly in the early stages of learning to read by initially amassing a large vocabulary of words learned by sight as whole words, only to flounder later on in Years 3 or 4 when the number of words they need to be able to read increases so much that they can no longer cope by using this method. Consequently, it makes good sense, initially, to teach all children using phonics from Day 1 of Kindy.

As Snow and Juel so eloquently put it in 2005: "attention to small units in early reading instruction is helpful for all children, harmful for none, and crucial for some".

Emeritus Professor Kevin Wheldall AM
Joint Editor

What we've been reading

Nicola Bell

In the past six months I have dipped in and out of a few different book genres. Like most other Australians, I read (and loved) *The Rosie Result* by Graeme Simsion and *Nine Perfect Strangers* by Liane Moriarty. In the way of non-fiction, I enjoyed listening to the audiobook versions of *Boys Will Be Boys* by Clementine Ford and *Gut* by Giulia Enders. I did find I had to pause *Gut* whenever my car window was wound down (lest any passers-by be offended by the quite graphic descriptions of bodily functions). I also read a number of autobiographical books, including *How Not to Be a Boy* by Robert Webb, *The Land Before Avocado* by Richard Glover, *Peggy and Me* by Miranda Hart, and *My Squirrel Days* by Ellie Kemper. All were brilliant. The only book I've struggled to get through lately is the Man Booker Prize 2018 winner *Milkman*, by Anna Burns. It's been shelved for now, but I haven't lost hope; I might pick it up again when I'm in a more patient headspace.

Alison Madelaine

My professional reading included Greg Ashman's *The Truth About Teaching: An Evidence-Informed Guide for New Teachers*, but I won't say too much about that as there is a review in this issue of *Nomanis*! In my spare time, I mostly read fiction, but have read a few non-fiction titles recently: *Any Ordinary Day* by Leigh Sales, *The Land Before Avocado* by Richard Glover (the funniest book I've read in a very long time) and *I'll Be Gone in the Dark* by the late Michelle McNamara. Michelle McNamara was a true crime writer trying to solve the case of the Golden State Killer. Her book was released posthumously in February 2018 (two years after her death), and just two months later, police arrested a suspect. His trial is yet to take place. Although I did finish them, I was underwhelmed by *The Natural Way of Things* by Charlotte Wood, *The Party* by Elizabeth Day, and *Bridge of Clay* by Marcus Zusak (I loved *The Book Thief*, so I had expectations). One of my favourite books of this year has been *The Cellist of Sarajevo* by Christian Galloway, originally published in 2008. This is an account of the siege of Sarajevo of the 1990s, from the perspective of three different characters. My other favourite was *Boy Swallows Universe* by Trent Dalton and I can see why Dalton cleaned up at the recent Australian Book Industry Awards. Finally, I read two very different novels about child abduction cases: *The Nowhere Child* by Christian White and *The Ones You Trust* by Caroline Overington. Both were full of twists and were definitely page-turners, but don't read *The Ones You Trust* if you have any children currently attending daycare.

Meree Reynolds

Since the last issue of *Nomanis* I have read a few great books and have also spent many hours searching for and reading items related to family and local history. In the weeks leading up to Anzac Day I read war service records, books and newspaper articles about family members (three great-uncles) who served in World War I. This made Anzac Day more relevant for me and enabled me to share information with curious and enquiring relatives. Books that I thoroughly enjoyed were *The Girl on the Page* by John Purcell, *The Punishment She Deserves* by Elizabeth George and *We Were the Lucky Ones* by Georgia Hunter. Currently I am reading *The Rosie Result* by Graeme Simsion. I have read *The Rosie Project*, the first book in this series that deals with autism in a humorous, yet thought-provoking, way. Simsion's new book, the third in the series, continues with the focus on family and autism, highlighting issues related to diagnosis, labelling and the education of young people with autism. It seems odd, though, that I can't read too much of it at a time, perhaps as it evokes memories of issues that arose when I worked as a special educator in the past.

Kevin Wheldall

For a while, I stopped reading *Barkskins*, a novel by Annie Proulx, daunted by the 700-plus pages, but resumed it later; and I'm glad I did. It is a powerful historical reflection on the ecological destruction caused by indiscriminate logging in Canada in times past.

Gratitude by Oliver Sachs was published posthumously. This (very) short but beautifully produced little book comprises four essays written in the last months of his life. But one cannot escape the feeling that the publishers are cashing in on what is a very slight work.

I have begun to read (or re-read) Anthony Powell's much acclaimed *A Dance to the Music of Time* series of 12 novels. It covers the period from 1905 when the narrator Nicholas Jenkins was born, to the late sixties. I have read the first three volumes so far – *A Question of Upbringing, A Buyer's Market*, and *The Acceptance World*. In a similar but more contemporary vein, I have also enjoyed enormously the five Patrick Melrose novels by Edward St Aubin.

The latest instalment of Tudor history from C. J. Sansom, *Tombland*, was as brilliant as ever. His novels, in my view, are superior to Hilary Mantel's admittedly excellent books covering the same period, Man Booker notwithstanding. I was also greatly impressed by Sebastian Faulks' *Paris Echo*, set in Paris during World War II and dealing with the sensitive topic of collaboration, and Willian Boyd's *Love is Blind*; quite a strange, sad book.

I was determined to read Stephen Hawking's *Brief Answers to the Big Questions* which I was given for Christmas. I think I even understood parts of it, at least for a short while. But I discarded *God is Good for You* by Greg Sheridan after a few chapters finding it both lame and unconvincing. Argument by assertion is not to my taste.

Fans of *The Rosie Project* and its sequel *The Rosie Effect*, by Graeme Simsion, will be delighted by the publication of the third and, apparently, final instalment in the Rosie trilogy, *The Rosie Result*. Those late to the series are in for a treat, as our hero, Don Tillman, faces life 'on the spectrum'. But save yourself valuable hours of reading time by skipping Alexander McCall Smith's *The Department of Sensitive Crimes* and Marcus Zusak's *Bridge of Clay*, both of which I found unsatisfying, not to say tedious.

Robyn Wheldall

In the last few months I have enjoyed (and been informed by) *Sapiens … A Brief History of Humankind* by Yuval Noah Harari. I think this is one of those books that everyone should read. It telescopes us out from the preoccupations of the present day to see our place in the vast history of humankind. It's like a literary version of gazing into a clear night sky in the country. A fascinating read.

I have also enjoyed *Elizabeth Macarthur: A Life at the Edge of the World* by Michelle Scott Tucker that details the life of this impressive woman in the early years of the British colony in New South Wales. More typically described as being the wife of John Macarthur, who has been historically credited with the establishment of the wool industry in Australia, it is encouraging to see the incredible fortitude of this early colonial figure brought into the light; one of the untold stories of the women of early colonial Australia.

Speaking of fortitude, well known and highly acclaimed journalist Leigh Sales has chronicled the experiences and resilience of contemporary Australians in *Any Ordinary Day*. This was in response to her own series of traumas that occurred within a short period of time. Sales had had a life that had been pretty untouched by personal trauma until events turned otherwise for her in her mid-life. This generated a fear of what life can bring and set her on a course of exploring people's responses in the face of adversity. This book can be quite harrowing so the timing of reading this one might be something to consider.

Synthetic phonics: what it is and what it is not

Stephen Parker

All phonic approaches are not created equal, with synthetic phonics defined by specific characteristics, as outlined here.

Background

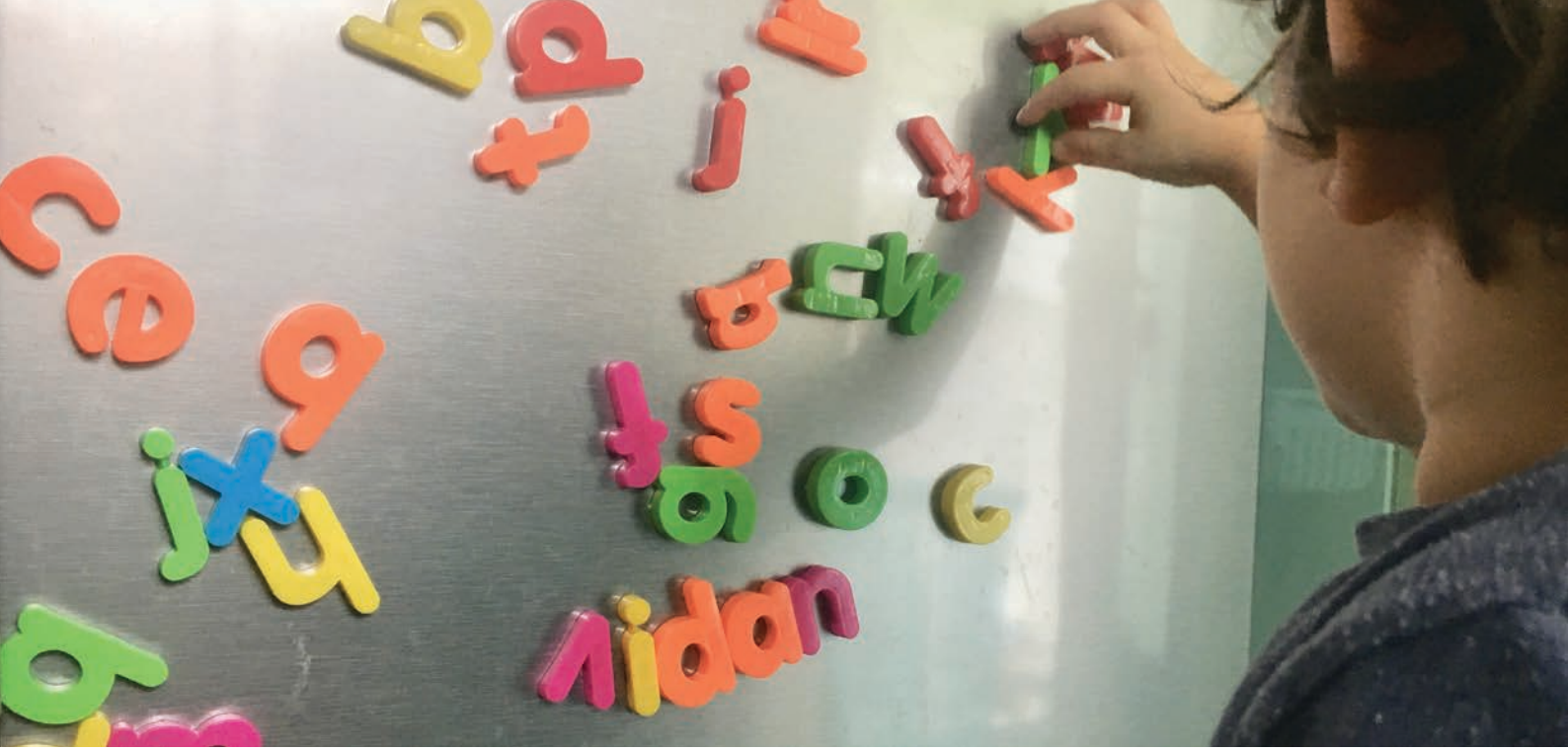
During the quarter century, 1975-2000, the dominant method for teaching reading in the English-speaking world was Whole Language. Its main characteristics were:

- Immersion in so-called 'real' books. This was in opposition to the artificial Dick and Jane readers of the '40s, '50s, and '60s in the US (Janet and John in the UK, John and Betty in Australia). This immersion was supposed to lead, easily and naturally, to reading – just as earlier in the child's life, immersion in conversation led to speaking.
- Little to no phonics. Phonics instruction, if it did occur, was unsystematic, and was taught only as a last resort.
- Rote-memorisation of sight words.
- Word-guessing based on pictures, or context, or the word's first letter.
- Early writing using 'invented' spelling. This resulted in spelling by letter names rather than letter sounds (e.g. EZ for 'easy'; RM for 'arm'; LFN for 'elephant').
- Learning by personal 'discovery' rather than by direct instruction from a well-trained teacher.

In 2000, the US *National Reading Panel* (NRP) condemned Whole Language by name, and in its place, called for *systematic* phonics. The educational establishment (professors in Teacher Colleges, the International Literacy Association, the National Council of Teachers of English) responded with Balanced Literacy.

There's no universally agreed-upon definition for what constitutes Balanced Literacy (see *here* for further discussion of the many problems this fact creates). It seems clear to me, however, that *Balanced Literacy was (and is) an attempt to rescue Whole Language by 'balancing' it with some type of phonics* – presumably *systematic* phonics in light of the critical NRP report. So, what types of phonics can reasonably coexist with Whole Language? There are only three candidates: **analytic phonics**, **analogy phonics** and **onset-rime phonics**.

Analytic phonics requires that the child first build up a large cache of sight words. These words can then be analysed, allowing the child to 'discover' the letter/sound relationships in our alphabetic code. Here are two examples. Once BOAT, BOY, and BED are sight words, the child can be led to discover that B symbolises the sound /b/. Once BOAT, LOAF, and SOAP are memorised, the child can be led to discover that OA symbolises /O/ (long O). To systematically cover the alphabetic code in this manner takes 5-6 years, due to the required sight word memorisation and to the 'discovery' mode of teaching. (See, for instance, the popular Balanced Literacy book, *Words Their Way*, by Donald Bear.)



Analogy phonics also requires a large cache of sight words to get started. My favorite example of this type of phonics, because it seems so implausible to me, is taken from a book by Balanced Literacy author Jennifer Serravallo. In the *Reading Strategies Book* (p. 82), she suggests this strategy: suppose a child had GREEN and SLOW memorised as sight words. Suppose, too, that the child knows (via analytic phonics) that N symbolises the sound /n/.

Now the child is faced with reading the unknown (for her) word GROWN. So, she 'word-solves' by analogy. She takes the GR sound from her sight word GREEN, the OW sound from her sight word SLOW, plus the sound of N, and blends these 3 sounds together: /gr/+/ow/+/n/ = GROWN. Having thus pieced together a pronunciation, she checks if the word makes sense in the context of the sentence.

[Whether such a strategy is realistic for beginners – and whether analogy phonics could, even in a dozen years, systematically cover the alphabetic code – the reader can judge.]

Onset-rime phonics is really a subset of analogy phonics. Here's how it works. Suppose TEACH is a sight word for Johnny. EACH is called the rime, T the onset. Now Johnny runs into the unknown (for him) word BEACH. To identify it, he needs to recall TEACH, not by sound (he doesn't know that yet), but by the fact that visually, both TEACH and BEACH have the same 4 letters (E, A, C, and H) in the same configuration. Now he simply(?) subtracts the T sound from TEACH and, in its place, substitutes a B sound (buh?) and he's got it: BEACH. The hope is that he'll 'read' PEACH, BREACH, LEACH, BLEACH, PREACH, and REACH in the same manner.

Okay, so that's the EACH rime family. But what about the ACK, OOP, and UNK families? You might find yourself wondering at this point, just how many rime families are out there? Most teachers who use onset-rime don't realise there are over 300 rime families in English. One sight word, acting as the pronunciation key, must be memorised for each rime family. It gets worse. This covers only single-syllable words. Many more rimes exist only in multi-syllable words (e.g. ULT in ADULT, RESULT, and CONSULT; ECT in DEFECT, RESPECT, and SELECT). Rote-memorisation of rimes and onsets, including the sounds of all the beginning blends (BL, SP, TR, and so on), quickly tops 400 items!

These three types of phonics are not only compatible with Whole Language, they satisfy the NRP's weak and nebulous definition of systematic phonics as "a planned, sequential set of phonic elements taught explicitly". The NRP, in fact, explicitly endorsed the above three types of phonics:

> *In teaching phonics explicitly and systematically, several different instructional approaches have been used. These include synthetic phonics, analytic phonics, analogy phonics, and onset-rime phonics. Although these explicit and systematic phonics approaches all use a planned, sequential introduction of a set of phonic elements with teaching and practice of those elements, they differ across a number of other features.*
> (p. 2-99)

The NRP may have condemned Whole Language, but it literally paved the way for Balanced Literacy to flourish. It can hardly be surprising that the NRP has failed to reform reading instruction in any significant way. (See the *Nation's Report Card* if you believe Balanced Literacy has improved the reading ability of our children in the past two decades.)

Balanced Literacy is Whole Language, but now with an added ingredient: some analytic, analogy, and/or onset-rime phonics. It has become the dominant method for teaching reading and spelling throughout the English-speaking world – except in England.

How did England escape this madness? Simple. There, in 2006, the *Rose Report* was published. The Rose Report, unlike the reports of both the National Reading Panel (US, 2000) and Australia's National Inquiry (2005), did not simply issue an innocuous call for systematic phonics. The Rose Report went a crucial step further: it called explicitly for synthetic phonics.

Synthetic phonics can't be balanced with Whole Language. It stands in utter opposition to both Whole Language and Balanced Literacy. It's not a strategy for 'word-solving' (as are analogy phonics and onset-rime phonics). It's a logical and powerful method for teaching reading and spelling – and it contradicts Balanced Literacy in every way. It sets up a stark choice for anyone wishing to teach a child to read: Balanced Literacy

or synthetic phonics.

With the above as background, I would now like to specify, precisely as possible, what synthetic phonics is – and what it is not.

The English alphabet is a set of 26 arbitrary characters, each of which symbolises one (or more) basic speech sounds. The alphabetic code is the full set of letter/sound correspondences that determine how written English is spoken and how spoken English is written. To transform sound into print is to encode; to transform print back into sound is to decode.

Out of the 200+ letter/sound correspondences in the code, roughly 105 – 135 need to be explicitly taught in order for the child to become an independent reader. (If you're curious as to which letter/sound correspondences I think are necessary, look in appendices P and Q in any of my *free books*.)

Knowledge of letter names should be in place in order to start a synthetic program. However, it's not necessary for all 52 upper-case and lower-case letters to be nameable by the child before beginning. Students can be taught the names of just 4-8 letters (a mix of consonants and vowels) in order to get started, and then be taught additional letter names as the program progresses. This enables children to get to genuine reading *as soon as possible* – an important motivational consideration.

[Note: I'm aware that author Diane McGuinness, in her book, *Early Reading Instruction*, strongly opposes teaching letter names in the early stages of learning to read. While I admire and respect her work, I disagree with her 'only my way' approach. On a practical level, at least here in the US, many kids arrive in Kindergarten already knowing letter names; this knowledge can't be unlearned. Also, to orally spell a word requires letter names. I believe such oral spelling is useful in the earliest stages. I see no intrinsic reason why a synthetic phonics program can't accommodate EITHER a letter-name-first OR a letter-sound-first approach. Research on this topic is *inconclusive*.]

In what follows, items 2, 3, 4, and 5 are paraphrases of the four items in the Rose Report (p. 20) that are referred to as "high quality phonic work". Item 8 is also strongly emphasised in Appendix 1 of the Rose Report.

The characteristics of a synthetic phonics program

1 Synthetic phonics is a bottom-up approach to reading and spelling. 'Bottom-up' because instruction starts, not with whole words, but with the most basic sound unit there is: the phoneme. The word SHOP, for instance, has three sounds or phonemes: /sh/, /o/, and /p/ (represented by the letters SH, O, and P respectively). To use synthetic phonics is to teach phonemic awareness, with letters, throughout the entire program. This is the type of phonemic awareness training that the NRP called "most effective".

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2 From Day 1, the major grapheme/phoneme (letter/sound) correspondences of the alphabetic code are taught in an explicit and systematic manner, using a clearly-defined sequence, with each new topic building on what has already been learned.

3 As soon as 'some' letter/sound correspondences are mastered (say 4-8), children can start reading words; that is, they blend (sound out, synthesise) phonemes, left to right, all through a written word in order to pronounce it. This is the 'primitive' form of decoding – not to be confused with the expert, at-a-glance, automatic decoding that begins to develop, slowly at first, then more rapidly, as a synthetic program progresses.

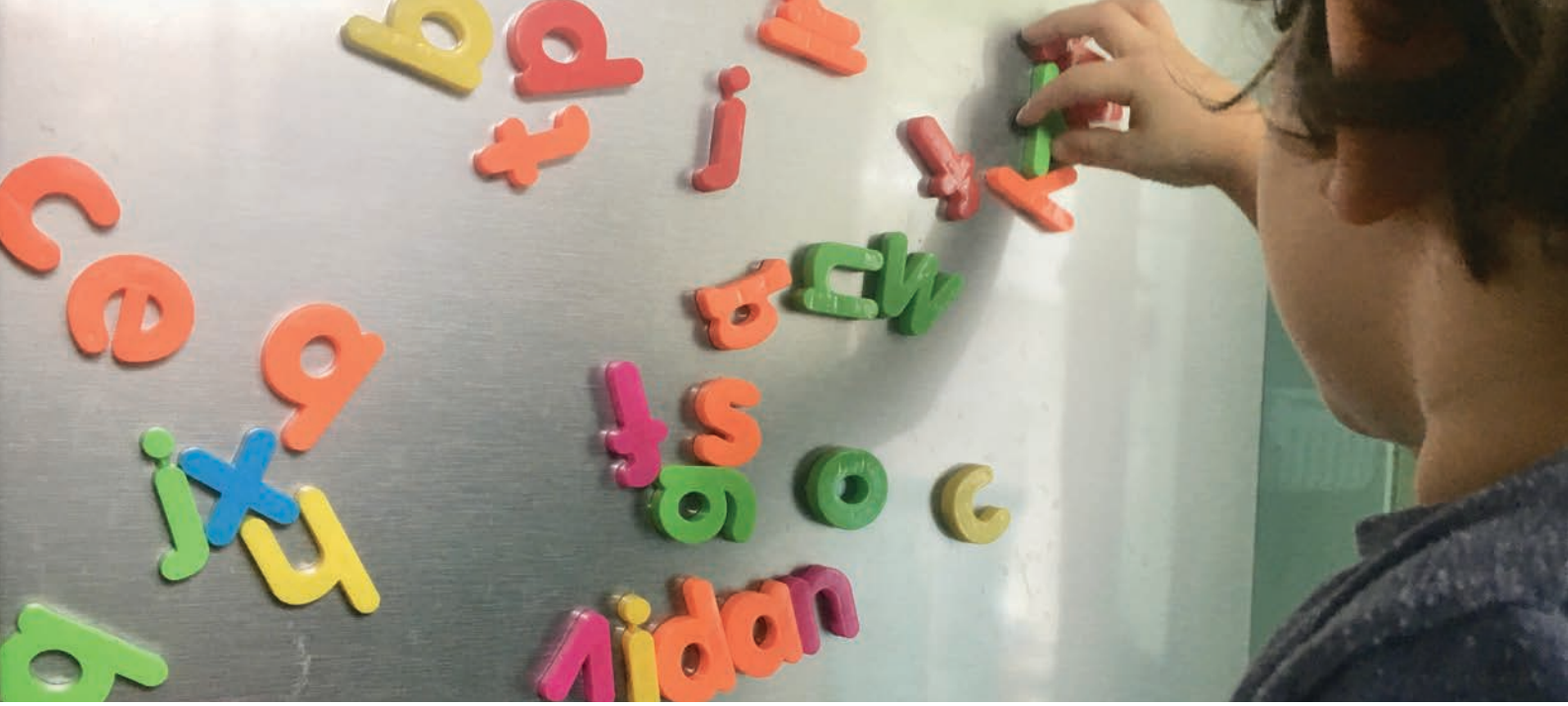
4 Children are taught to listen carefully, and to segment a spoken word into its constituent phonemes in order to spell it. Initially, best practice is to do this only with words the children have just sounded-out by decoding, thereby making the segmenting and spelling task easier for them.

5 Children are explicitly shown how blending and segmenting are reversible processes.

6 Children are asked to read for themselves only words and sentences for which they already have the skills to succeed. Such text is called decodable for them.

7 A synthetic phonics program is easily completed within two years for the vast majority of students, meaning that, by the end of two years, children are able, within reason, to read independently. Levelled books are neither necessary nor helpful.

8 Reading comprehension (RC) during these two years is understood strictly in terms of the Simple View of Reading. Roughly half of every Language Arts period is spent with the teacher reading children's literature to the class and then conducting a group discussion about that reading. In this manner,



both decoding skills (D) and language comprehension skills (LC) improve daily. The Simple View makes the claim: RC = D x LC. Further discussion of the Simple View can be found in my *blog*.

Perhaps the main characteristic of a synthetic phonics program is that it presents reading to the child as a logical skill right from the start. Children, like adults, need to understand what they're being asked to do – especially if the task requires significant daily effort extending over a period of many months. Without such an understanding, many children will give up.

A synthetic phonics program does not …

1 Have children rote-memorise words (typically called 'sight words') without regard to the sound value of all the word's letters or letter groups. Exception: there are perhaps 5-10 high-frequency words whose spellings are so bizarre (when compared to their actual pronunciations) that rote-memorisation may be necessary (e.g. ONE, TWO, THOUGH, EYE, ONCE).

2 Use top-down teaching methods that start with whole words (sight words) rather than with phonemes and letters. Any program that uses analytic phonics, analogy phonics, or onset-rime phonics must, by its very nature, be top-down.

3 Expect that children will discover the letter/sound correspondences of the alphabetic code. There's neither time nor reason to have students 'construct their own knowledge' when it comes to learning the skill of reading. All other academic skills depend on the ability to read. (For a critique of 'constructivism' as it is misapplied to the teaching of reading, see the Australian National Inquiry *Teaching Reading*, especially p.29-30.)

Synthetic phonics teachers need to be comfortable with far more whole-class, direct instruction than is currently the norm in most of today's reading classes where 'mini-lessons' prevail

4 Expect, encourage or allow children to guess the identity of an unknown word based on pictures, context or the word's first letter. (Context, of course, is used to decide how to pronounce homographs like WIND and BOW.)

5 Use 'predictable' text, thereby giving everyone involved the illusion the child is reading. The reality is that the child is merely reciting memorised sight words, and guessing. [Fourth Grade Slump, here we come!]

6 Ask children to write, using words they have not yet been taught to spell, thereby assuring 'invented' spelling and letter-name spelling. These repeated spelling errors prove difficult for children to correct later on. Phonetic spelling is the goal. Phonetically plausible mistakes (e.g. BOTE instead of BOAT) show significant skill. A child making this mistake should be congratulated, then corrected. The child should also be told that, had the word been NOTE, the O-T-E spelling would have been correct, and NOAT would have been wrong.

7 Use levelled books. Independent readers will, with a little help, find books appropriate to their skill level. No child need be stigmatised or embarrassed by being at level B when all his or her friends are at levels D and E.

8 Need teachers who can function only as a 'guide on the side', or worse, a 'peer at the rear' [Who comes up with these awful slogans

anyway?] The teacher in a synthetic phonics program must be a 'sage on the stage'. That's why he or she is there, being paid a salary. Synthetic phonics teachers need to be comfortable with far more whole-class, direct instruction than is currently the norm in most of today's reading classes where 'mini-lessons' (5-10 min each) prevail. They also need to have a reasonable understanding of the science behind reading instruction. (See *here* for further discussion.)

Note: The above list (of what a synthetic phonics program does not do) could serve equally well as a list of what a Balanced Literacy program does do in the initial two years.
A final thought…

Which would you choose?
Imagine for a moment that you, as an adult, were just now beginning the task of learning to read and spell. Which of these two teachers would you prefer?
Teacher #1, right at the outset, begins with direct teaching of the alphabetic code. In the first week, for instance, you learn that the letter M symbolises the nasal sound "mmm", N symbolises "nnn", and A symbolises "ahh" (the first sound in APPLE). Once you've mastered these three letter/sound relationships, this teacher places the three letters together on a blackboard, M A N, and helps you to blend the three sounds these letters symbolise, into the spoken word MAN.

The teacher does the same with the words AN and AM and has you use these simple words in spoken sentences, helping you if necessary: "I want AN egg". "I AM sleepy." The teacher may even place N A M on the board and help you to blend that as well. The two of you agree that NAM is not a real word, but then the teacher places the words enamel and dynamic on the board to show you how NAM will certainly appear later on, in more complex words. You discuss the meanings of these two words even though you can't (yet) fully read them.

Over time, the teacher does the above with many other letters, sounds, and simple words. Often, the teacher reverses the process and asks you to spell a spoken word you've just recently created by blending. Pretty quickly, you become keenly aware of phonemes in speech and you begin to understand the logic of print: it's nothing more than encoded sound! Because you understand what's going on, your brain starts making connections between the spelling of MAN (a new thing) and the sound and meaning of MAN that have been stored in your brain since you began speaking. You become increasingly enthusiastic about your reading lessons, and you find yourself wanting to learn more about this amazing alphabetic code.
Teacher #2 has a very different approach. He or she places MAN on a 'word wall' so you can see it throughout the day. This teacher also has you read the word in a predictable 'little book', pointing as you go ("The MAN is sleeping ... The MAN is eating … The MAN is running …"). The hope is that by constantly seeing the words THE, MAN, and IS, you'll eventually memorise them as 'sight words'. (You're expected to guess the meaning of the words, "sleeping," "eating," and "running" by looking at the pictures that are ubiquitous in these 'little books'.)

This teacher makes no attempt to explain why the letters M, A, and N, in this particular order, represent the spoken word MAN. Though difficult to do, precisely because no explanation has been offered, you study the word carefully, and you memorise it as a symbolic representation of the spoken word MAN – similar to the way you might memorise a password, or that the symbol '$' means DOLLAR.

So far so good. But day after day, Teacher #2 presents more sight words for you to rote-memorise. There seems to be no end to them! Only later – perhaps much later – will this teacher have you slowly 'discover' for yourself (using analytic phonics) the letter/sound relationships of the code that explain the spellings.

I believe most adults (including most Balanced Literacy teachers!) would choose Teacher #1 for themselves, precisely because they'd want someone who would make the skill of reading understandable from the beginning, that is to say, open to the use of reasoning, and to 'figuring it out'. If forced to study with Teacher #2, most articulate adults would insist upon explanations: why do the letters M, A, and N represent the spoken word MAN rather than, say, DOG, TURNIP, or BATTLESHIP? How can guessing, based on pictures, result in skilled reading? Why are CAT, CITY, and CHAIR listed under C on an alphabetic 'word wall' when each word starts with a different sound?

Children, of course, don't have the above choice – and most find themselves facing Teacher #2 in a Balanced Literacy classroom. These children lack the confidence and the maturity to justifiably insist that their teacher offer some explanations. Children, eager to please, simply do the best they can. Some will become skilled readers in spite of the system – perhaps with help from home or from outside tutoring. Others, intent on getting along, will plug away, year after year, but they'll never become proficient readers or read for pleasure. And still others, including some of our brightest kids, will get so frustrated with the sight words, the guessing, and the lack of logic – they'll simply give up. They'll refuse to pay attention. Their self-esteem will plummet. They'll begin to act out. They'll start hating school. And in no time at all, they'll find themselves categorised as 'learning disabled', caught in a system that has utterly failed them.

There's a lot of wasted human potential and needless suffering going on in our schools. Why don't we teach our children to read as we ourselves would want to be taught?

Stephen Parker is a life-long teacher of Mathematics, Computer Science and Reading. He lives in Boston with his wife Celeste (an Ob/Gyn), and their three children: Kate, Tom, and Dan – all currently in college. His free books on reading instruction are available at his web site: www.ParkerPhonics.com.

Q & A with Rhona Stainthorp

British reading researcher Rhona Stainthorp reflects on her greatest influences, barriers to improvement in the teaching of reading, and a lifelong passion for books. ►

About Rhona

It's difficult to give you my background without seeming rather smug because I was born in Lancashire in 1945, so I am one of the luckiest generations in the UK. World War II had just ended; the Labour Party had been voted into power; yes, there was food rationing, but our diet was really healthy; the National Health Service was about to be introduced; and I was born into a family who believed education was of paramount importance. My parents also believed that girls had the right to have no boundaries placed on their aspirations. I have four degrees and never once had to pay the fees. Every degree was supported by the state. My grandchildren, should they choose to go to university, are likely to leave with a debt of more than £50,000 – that's around A$90,000. Many of my generation have been very privileged, but we have been profligate curators.

Right now, the UK feels to me to be an unsafe, prejudiced, inward looking, society. The Brexit referendum has unleashed some really unpleasant tendencies. I just have to hope that we can pull back and rebuild ourselves as a caring egalitarian country before it is too late. On the positive side, we are so much more successful at teaching our children to read, so if they exercise their critical faculties, the next generation may lead us forward to create a better future for themselves.

I'm reaching the end of my working life, but I've not quite got there yet. I still give a few lectures and have the joy of supervising doctoral students. They certainly keep my brain ticking over. And I've got enough data to keep me writing for a few years yet. How do I fill the other daylight hours? I do Tai Chi and Qigong. But more importantly, I've taken up running and doing triathlons with my husband. Only short distances – but I'm convinced that I'd have made the Olympics if only I started 60 years ago.

Rhona, how did you first become interested in research in reading?

If I was being romantic, I would say at about 68 years ago. I have some artefacts that my mother kept from my childhood, which show that I was obviously obsessed by alphabets. There are lots of illustrated ABCs with an object for each letter sound. I'd already decided that phonics was a positive thing. However, in what seems like a life time ago now, my first job was as a teacher in a boys' secondary modern school in outer London. This was at a time when 11-year-olds in England sat the 11-plus exam. This determined whether they would go to a grammar school or a secondary modern school. If they went to a secondary modern, they left education aged 15 years with no academic qualifications. My head teacher did not support this policy and simply ignored it, so remarkably, pupils were given the opportunity to take public examinations and stay on into the sixth form to study for A-levels and even apply for university. I was teaching A-level British Constitution to the older pupils but also taught history to the youngest. The range of ability was huge and, along with potential university candidates, there were boys who could barely read or write. My one-year postgraduate teaching course had not given me the skills to support such pupils, so I decided to apply to do a second degree in psychology at Birkbeck College in the hope that this would give me some insight into how to help them. At this stage I was not thinking about doing research myself – I just wanted answers. Birkbeck is an unusual, indeed unique institution in the UK, because all undergraduate degrees are taught in the evenings. Also one has to have a day job to be registered. Birkbeck students double up on life even to this day. Studying psychology was the most intellectually exciting time of my life. I just delighted in every module I studied, but in the end got 'side-tracked' into developmental memory. I went to the University of Reading to begin a PhD into visual memory and hated it! I was a disaster. However, there was one good result about my short time there – I met a young lecturer called Max Coltheart.

Given that my PhD research was going nowhere fast, I applied for, and was lucky to get, jobs lecturing in psychology

Given that my PhD research was going nowhere fast, I applied for, and was lucky to get, jobs lecturing in psychology, first at a college training speech and language therapists and then at a teacher training college. And the rest, as they say, is history. At the teacher training college I was asked to run an elective module called The psychology of reading, so the obvious thing to do was to contact Max and ask for a reading list. He recommended Gibson and Levin's The Psychology of Reading. This was the perfect book to help me bootstrap my way into reading research and to return to my aim of finding out about how people learn to read and write.

This was all at a very strange bleak period in the teaching of reading in the UK – the mid-'70s and –'80s. At that

time, student teachers were generally told that learning to read was the same as learning talk – we don't teach children to talk so we don't need to teach them formally to read. Wrong in every possible way. The Whole Language approach to teaching reading was the orthodoxy with Goodman and Smith being the required texts. My module stood out like a sore thumb. I expected students to read the empirical evidence about how people read words, and how this evidence might impact on pedagogy. I still occasionally hear from old students who tell me how grateful they were that they signed up for the module. The research evidence, even at that time, was overwhelming that children have to be taught HOW to read words: they will not just learn by osmosis. Every teacher will tell you, one learns most from one's students, so in order to answer my students' questions, I had to begin to conduct research myself. This was the start of 35 years of researching reading and writing development.

Who has most influenced your thinking about reading and why?

I'm going to treat "who" as a plural pronoun. The first in my list must be Max Coltheart. During my abortive time as a PhD student at Reading, one good thing was the opportunity to attend his classes on cognitive psychology and be privy to seminars and discussions where the Dual Route was being developed. This really whetted my appetite and made so much sense when considering the development of word reading. I used it as a framework for my teaching.

In order to gain a more rigorous training in research into reading I then decided to sign on first for an MSc in Human Communication and then a PhD, both at the Institute of Neurology in London. The person who supervised both my MSc dissertation and PhD was Maggie Snowling. I had first met Maggie when she was a PhD student under Uta Frith at UCL and I was teaching at the Speech Therapy college. I needed help in providing small group discussions for the students and Maggie applied for the post. When I left to have a family and take up a job in teacher training, Maggie replaced me. The teacher became the student and as far as I was concerned, there was only one person who I wanted to start me out on a research career, and that was Maggie.

Then there is Morag Stuart. Morag had been a primary teacher in London in the time of Whole Language. She had also taken the high road to Birkbeck, but by this time Max had moved from Reading to take up a chair in the psychology department there. This meant she was able to do her PhD with him as her supervisor and subsequently move from teaching infants to teaching Birkbeck undergraduates. At that time, Maggie was running a reading group for her PhD students and in 1988 we all read Stuart and Coltheart, Does reading develop in a sequence of stages? Well, Birkbeck was just across the park from Maggie's office so I strolled over one day to introduce myself to Morag. Ten years later we became colleagues at the Institute of Education in London. I've just realised that she and I have not stopped talking about reading for the last 30 years.

When the Whole Language point of view held sway in the majority of training establishments in the UK, standards in reading were poor

The one thing that Max, Maggie and Morag all share is a high level of intellectual curiosity, an ability to ask insightful questions, and the creative powers to design studies to answer these questions. And they share a generosity of mind to support colleagues and students.

Psychologists working in university education departments and/or researching reading, reading development and reading teaching in the UK are very small in number. This can make intellectual life quite lonely. Morag had the idea of starting a group for researchers in different universities to meet in a supportive environment on an occasional, informal basis. Initially the group was called Work in Progress, but the acronym WIP didn't have quite the right tone, so in the end we came up with Forum for Research in Literacy and Language: FRiLL. This group has gone from strength to strength over the years. PhD students have gained academic posts and grants, and are making significant contributions to reading research in the UK. One noteworthy output from FRiLL has been the development of the Diagnostic Test of Word Reading Processes: the only UK standardised test of regular, exception and nonword reading accuracy. The impetus for the development of this test was [a paper by] Coltheart and Leahy (1996).

You will begin to identify a spider's web here – everything is connected.

What do you consider to be the most important contribution you have made to the scientific study of reading?

This is difficult because I have always worked collaboratively, so I don't

think it is possible to identify a unique contribution. However, the first sizeable research grant I obtained in 1993 was to make a longitudinal study of precocious readers. I had the foresight to appoint Di Hughes as my research assistant. She was a trained speech and language therapist and infant school teacher: the perfect combination of skills for the project. When I applied for the grant there had only been one study of such children in the UK: Margaret Clark's 1976 Young Fluent Readers project. This had been a retrospective study of a group of school children in Scotland with no comparison control group. Tucked away in the book was the information that these children seemed to have what was called good auditory discrimination.

I was already studying phonological awareness and its relation to reading, and it seemed to me that precocious readers could be predicted to have established high levels of phonological awareness, and specifically of phonemic awareness at an early age. The Young Early Readers project, as it came to be called, identified a group of four-year-old children who had not yet started school, but who had taught themselves to read. It was important that they had not been given any direct instruction in reading other than some informal exposure to print. It was also important to compare their performance and progress with an appropriately selected control group. Each of our young early readers was paired with a child of the same age, gender, SES status, vocabulary level, preschool group, and same prospective primary school. The control children also needed to have had good exposure to print but, as yet, no ability to read words. We initially studied them for three years until they were seven years old; then when they were 11 years old at the end of primary school; and finally in their 20s. We felt that there was a lot to be learned from children who found no barriers to reading. The main difference between the two groups was that the young early readers had exceptional levels of explicit phonemic awareness right from the start of the project and the control children, though showing phonological awareness at the level of the syllable and rime, were not yet phonemically aware. A significant difference in phonemic awareness remained throughout the primary years and was even there in the young adults we were able to follow up into their 20s. This work, along with the work of so many other researchers, firmly established explicit phonemic awareness as being necessary for learning to read words in an alphabetic orthography. This leads to the conclusion that, when teaching phonics, it is important that teachers ensure their pupils are supported to develop explicit phonemic awareness. And following on from this, it is necessary that teachers in training have their personal phonemic awareness firmly re-established. It is not possible to teach phonics effectively if you yourself are not able to juggle with the sounds in words.

Could you recommend one of your own books or papers that you consider to be particularly important?

My paper, 'W(h)ither Phonological Awareness? Literate trainee teachers' lack of stable knowledge about the sound structure of words' addressed the issue of teachers' phonemic awareness. At that time in England we were slowly moving towards the policy that a programme of synthetic phonics should be introduced as the first approach to teaching children to read words. However, it was not recognised that, unless the teachers themselves had skilled fluent phonemic awareness, they would find it difficult to teach phonics accurately and effectively. Training courses had to change to ensure that student teachers themselves needed to be explicitly phonemically aware.

However, for teachers I feel Reading Development and Teaching, the book that Morag and I published in 2016, is particularly important. It took a long time to write because we wanted to ensure that we provided a really detailed but accessible examination of the processes involved in both word reading and reading comprehension. We hope we achieved our goal.

What do you consider to be the next frontier in reading research?

Well for me I think the next frontier is not in reading research. It is in writing research. I know there is so much more to be achieved in reading research, but in terms of education I would like there to be a much greater focus on writing. The outputs from reading research have provided the perfect blueprint for tackling writing. We really need to develop the same rich body of research about writing. We have to remember that, in terms of life chances, students are assessed by the quality of their writing. Writing ability becomes much more of a gateway to success than reading. So the next frontier will be to identify what determines writing ability and how to teach writing effectively.

What do you consider to be the barriers to improved reading instruction in your national and/or state school systems?

Teacher training and teacher knowledge.

When the Whole Language point of view held sway in the majority of training establishments in the UK, standards in reading were poor. It was a time of quite distorted argument. Anyone advocating a structured approach to teaching children how to read words was held to be a right-wing reactionary. There was a complete lack of acceptance of the need to TEACH children to read directly, and the evidence arising from psychological research was ridiculed. As I have said, the majority of students did not study how people read words.

Such were the concerns about standards of literacy in England that a National Literacy Strategy was introduced in 1998. This went some way to redress the balance, but it was not firmly grounded in an evidence-based framework. Given that there were still concerns that we were not meeting the needs of pupils, Jim (now Sir Jim) Rose was commissioned to write a report about the effective teaching of early reading. This was published in 2006 and is universally known as the Rose Review. The recommendation of the review was that the Simple View of Reading should be adopted as the framework for teaching reading by all teachers. In relation to the word-reading dimension of the Simple View, the review further recommended that schools should adopt

systematic synthetic phonics teaching as the first approach to teaching children to read words skilfully. Ten years on, this has largely been adopted and taken out of the political arena. However, the majority of primary teachers working at the present time were probably trained in the Whole Language era or in the early years of the National Literacy Strategy, so they have less than optimal knowledge and skills in teaching phonics. In 2017, a team from the University of Reading (Naomi Flynn, Daisy Powell and I) plus Morag Stuart were engaged by the Department for Education to run Phonics Roadshows for teachers. These included sessions about how people read words, why phonics is important for early word reading, why it is important to raise your own phonemic awareness in order to teach phonics. The dual route was given in evidence to enable the teachers to understand that exception words like SWORD, GIVE, HAVE, CASTLE need a different approach from regular words like SIT, GOT, HIVE, CAST. We required participants to work together to analyse phonics teaching programmes and to understand the need for consistency and a whole-school approach. If the feedback can be trusted, teachers were very grateful. For many of them, this was quite revelatory and revolutionary.

Teacher training in the UK is very limited in time. The majority of teachers do just a one-year postgraduate course to become primary teachers. And increasingly, they are doing school-based training which may only involve one day a week in a university. In my view, teaching reading is an intellectually challenging activity that needs highly trained professionals who have engaged, and keep on engaging, with the research evidence. It takes a minimum of five years to train a doctor and then junior doctors have years more training which requires them to keep up with the latest knowledge, developments and innovations. The same should be the case for the training of teachers.

What sorts of books do you like to read for pleasure?

It depends. I come from a family who read crime fiction almost continuously. We would discover an author and systematically work our way through all the books. I continue to do this today. At the moment I am working my way through Ann Cleeves' Shetland books. Then there is Donna Leon (which meant a trip to Venice and a boost in my Italian cooking) … Agatha Christie, Ngaio Marsh, Margery Allingham, Kathy Reichs, Michael Stewart, Reginald Hill, Ian Rankin. The list goes on and on. But I'm not completely bloodthirsty. I love P.G. Wodehouse … and he seems to stand the test of time.

Teaching reading is an intellectually challenging activity that needs highly trained professionals who have engaged, and keep on engaging, with the research evidence

In my book group, we try to choose books that will stretch us and lead to lively discussion. We love William Boyd and Ian McEwan. Unfortunately, this year we have set ourselves the task of reading a number of books almost as a penance. We seem to have universally hated Hilary Mantel's book on the French Revolution (*A Place of Greater Safety*) and had to conclude that we are a small group of philistines. However, as an antidote we treated ourselves to *A Tale of Two Cities*. What a joy Dickens is. We even read *Don Quixote* and were comforted to know that not everyone thinks it's great.

At the moment we are reading Pat Barker's Regeneration Trilogy. I read them all as they were first published and it seemed like a good time to revisit them.

What is your favourite novel and why?

An impossible question to answer. Fifty years ago I would probably have said *A Hundred Years of Solitude*. I was completely bowled over when I first found it and immediately re-read it a number of times. It was such a weird and wonderful world that Marquez had created. Then about ten years ago I revisited it. It doesn't work for me anymore and I am quite wary of revisiting some books just in case my memories are destroyed. So the favourite novel has to be one that I know I can read and reread and reread. It could be *Jane Eyre*. I read it every few years and still weep. It was a remarkable book for its time. The portrayal of Bertha is problematic from today's perspective, but Jane's strength and courage and honesty make her a powerful female icon. Then there is *Alice's Adventures in Wonderland*. The language is glorious and no reading researcher can go a day without quoting from Carroll… there's glory for you!

Why do some children learn to read without explicit teaching?

Jennifer Buckingham

Anne Castles

It's not magic – children who learn to read without explicit instruction are actually employing specific reading behaviours.

Reading and explicit teaching

Learning to read in an alphabetic language such as English is a complex task and, for most children, requires explicit teaching. In particular, *an extensive body of research* has demonstrated that, in the initial stages of learning to read, children benefit from systematic teaching about the connections between letters and sounds, known as phonics. Phonics knowledge allows children to work out how to say printed words for themselves and, if those words are in their oral vocabulary, to understand them. This initial learning provides the foundation children need to begin to read on their own, and so further build their fluency and text comprehension.

Potentially challenging the idea that basic reading skills must be taught explicitly are reports of children who learn to read even before commencing school, and who do so without direct teaching and with apparently little effort. How do these children achieve this, and what implications does it have for how reading should be taught in schools? To answer these questions, we need to consider these children's reading behaviours against the backdrop of what is known about how the brain learns to read.

How the brain learns to read

An extensive body of research has uncovered the cognitive and neural pathways of learning to read. For beginning readers, the route to the meaning of written words is via a phonological (sound) pathway in the brain. Children decode the phonology of written words using their knowledge of letter-sound relationships and, via this phonology, they access meaning of the word if it is in their vocabulary. Indeed, even when skilled readers encounter novel printed words, as we all do frequently (e.g. listicle, mansplain), they must revert to using this phonological pathway.

When a word has been viewed and read many times, it becomes stored in long-term memory and the reader can then retrieve its meaning directly from print, without going via the phonological pathway. They have a stored memory of the spelling of the word in their brain that allows them to recognise it rapidly regardless of its size, font, case, or colour. Fluent recognition of words via this pathway reduces cognitive load, allowing the reader to focus on comprehension in the broader sense of both literal and inferential meaning.

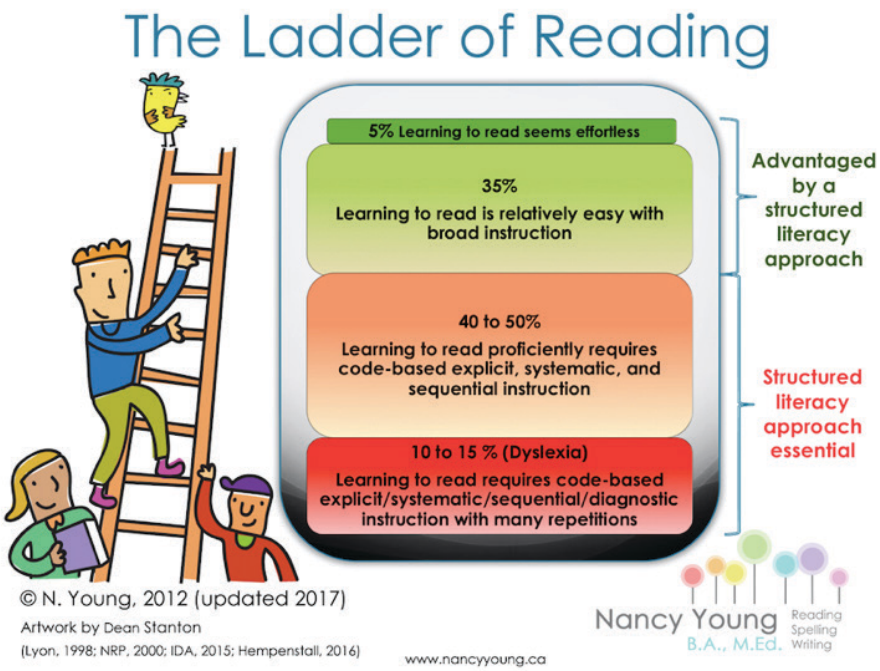
The ability to bypass the phonological route to reading, and read in this effortless way, is the end result of a complex learning process that is easier for some children than for others. However, irrespective of the ease with which different children learn, the basic acquisition process is the same.

Learning to read without explicit teaching

How, then, does the reading of a child who has not received explicit instruction align with what we know about how the brain learns to read, and how reading should be taught? The answer to this depends on the kind of reading behaviour being displayed by the child:

One frequently observed behaviour is that pre-school children begin to spontaneously name individual printed words. Typically, these are words that they see frequently in their environment, and that have a positive association: 'McDonalds' and 'Pepsi' are oft-cited examples! But it doesn't take long to establish that these children are usually not really 'reading'. Rather, they are recognising the words much as they would pictures. *Evidence* of this is that, if the letters of Pepsi are superimposed onto the McDonalds logo, these children will continue to read it as 'McDonalds'. And if the words are printed on a page in a different font (McDonalds), or case (PePsI), the children will no longer be able to read them. In contrast, as we know, skilled reading involves recognising words accurately and fluently regardless of their surface form. Thus, this early interest in naming words, referred to as logographic reading, cannot be considered an example of reading without explicit teaching.

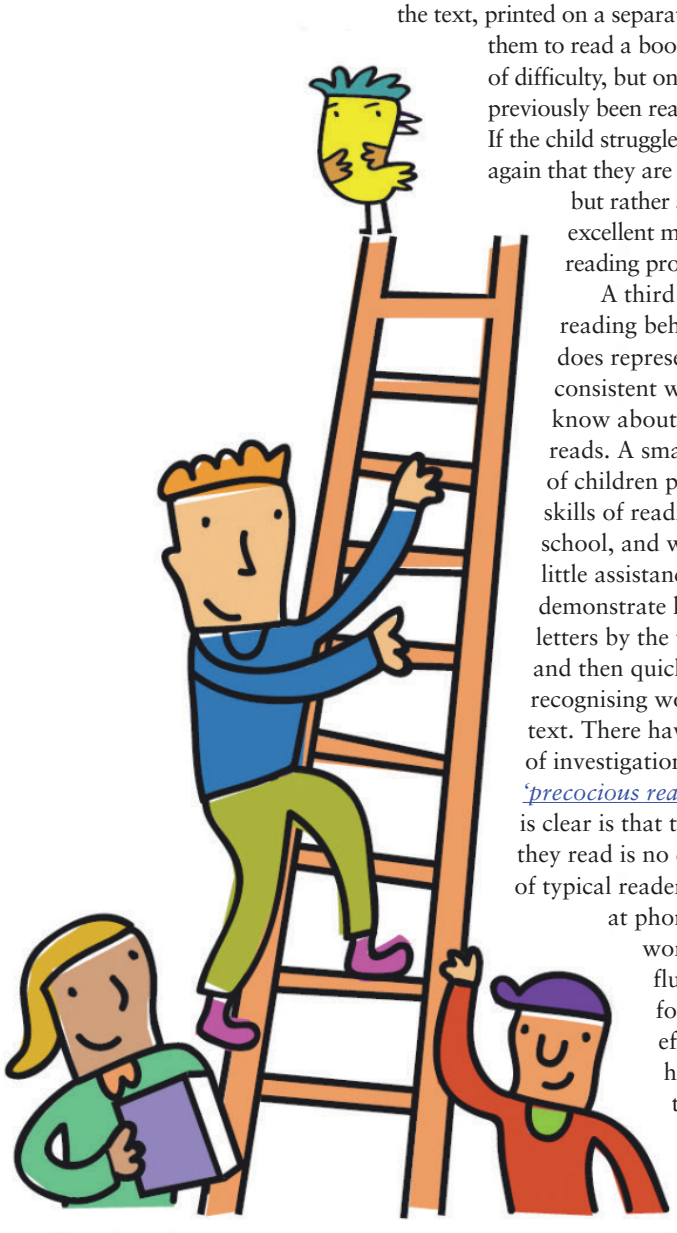
Some children continue with this *logographic strategy* even once they commence school, especially if they do not receive sufficient explicit phonics instruction. They might, for example, identify yellow based on it having 'two sticks in the middle', or look because of



Systematic, explicit phonics instruction helps children to make the neurological connections between the areas of the brain that are devoted to visual (writing), phonological (sound), and semantic (meaning) processing

its 'pair of eyes'. But this strategy will not serve them well once they need also to read follow and boot. Such children often experience problems in the middle years of primary school, when the books become more complex and exceed the size of their bank of memorised words. They then need to be taught phonics so they can decode and *read the many new words* they will encounter throughout their education.

A second observed form of reading without explicit instruction is when young children apparently 'read' books with which they are highly familiar, and which have been read aloud to them many times by their parents or caregivers. Such children can give a very strong impression of being able to read fluently, saying all the words correctly, and turning the pages at exactly the right point. However, once again, in most cases, these children are not actually reading, but rather are reciting the book from memory. Again, some simple tests will reveal this: ask the child to read a random extract of the text, printed on a separate page. Or ask them to read a book of a similar level of difficulty, but one that has not previously been read aloud to them. If the child struggles, this reveals once again that they are not really reading, but rather are using their excellent memories to mimic the reading process.



A third category of reading behaviour genuinely does represent early reading, consistent with what we know about how the brain reads. A small proportion of children pick up the basic skills of reading before starting school, and with relatively little assistance. Typically, they demonstrate knowledge of letters by the time they are two, and then quickly move on to recognising words and reading text. There have been a number of investigations of these so-called *'precocious readers'*, and what is clear is that the way in which they read is no different from that of typical readers. They are adept at phonics, and can read words accurately and fluently, across case, font and size. So, in effect, these children have been able to teach themselves the essential foundation skills of reading: they have not bypassed them but have just acquired them quickly and with little assistance.

This final group of children are very much in the minority. Nancy Young, in her Reading Ladder, estimates that such children represent no more than 5% of children.

Why all children should receive explicit phonics teaching as part of a comprehensive literacy program

Systematic, explicit phonics instruction helps children to make the neurological connections between the areas of the brain that are devoted to visual (writing), phonological (sound), and semantic (meaning) processing. Some children form these neurological connections quickly, while others require more intensive instruction and repeated exposures. A very small number of fortunate children are able to make the connections on their own, without explicit teaching.

When children begin school, we cannot predict with sufficient accuracy which children will struggle to learn to read without explicit, systematic phonics instruction and which will not. Therefore, the most ethical and prudent action is to provide all children with *the most effective teaching methods*, based on the best available evidence, thereby accelerating the progress of all children and minimising the likelihood that any child will struggle to learn to read.

This article first appeared in Teacher, *published by ACER. Reproduced with kind permission. Visit www.teachermagazine.com.au for more.*

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The whys and hows of research and the teaching of reading

How to use research to more effectively and appropriately assess different approaches to teaching reading.

Timothy Shanahan

I talk a lot about research in this space.

I argue for research-based instruction and policy.

I point out a dearth of empirical evidence behind some instructional schemes, and champion others that have been validated or verified to my satisfaction.

Some readers are happy to find out what is 'known', and others see me as a killjoy because the research findings don't match well with what they claim to 'know'.

Members of this latter group are often horrified by my conclusions. They often are certain that I'm wrong because they read a book for teachers that had lots of impressive citations that seem to contradict my claims.

What is clear from these exchanges is that many educators don't know what research is, why we should rely on it, or how to interpret research findings.

Research is used to try to answer a question, solve a problem, or figure something out. It requires the systematic and formal collection and analysis of empirical data. Research can never prove something with 100% certainty, but it can reduce our uncertainty.

'Systematic and formal' means that there are rules or conventions for how data in a research study need to be handled; the rigour of these methods is what make the data trustworthy and allow the research to reduce our uncertainty. Thus, if a researcher wants to compare the effectiveness of two instructional approaches, he or she has to make sure the groups to be taught with these approaches are equivalent at the beginning. Likewise, we are more likely to trust a survey that defines its terms, or an anthropological study that immerses the observer in the environment for a long period of time.

Research reports don't just provide the results or outcomes of an investigation, but they explain – usually in great detail – the methods used to arrive at those results. Most people don't find research reports very interesting because of this kind of detail, but it is that detail that allows us to determine how much weight to place on a study.

Given all of that, here are some guidelines to remember.

1 Just because something is written doesn't make it research.

Many practitioners think that if an idea is in a book or magazine that it is research. Some even think my blog is research. It is not, and neither is the typical Reading Teacher article or Heinemann book.

That's not a comment on their quality or value, but a recognition of what such writing can provide. In some cases, as with my blog, there is a serious effort to summarise research findings accurately. I work hard trying to distinguish my opinions from actual research findings.

Many publications for teachers are no more than compendia of opinions or personal experiences, which is fine. However, these have all of the limits of that kind of thing.

Just because someone likes what they're doing (e.g., teaching, investing, cooking) and then writes about how well they've done it … doesn't necessarily mean it is really so great. That's why 82% of people believe that they're in the top 30% of drivers; something that obviously can't be right.

As human beings we all fall prey to overconfidence, selective memory, and just a plain lack of systematicity in how we gain information about our impact.

Often when teachers tell me that kids now love reading as a result of how they teach, I ask, "How do you know? What evidence do you have?" Usually the answer is something like, "A parent told me that their child now likes to read". Of course, that doesn't tell how the other 25 kids are doing, or whether the parent is a good observer of such things, or even the motivation for the, seemingly, offhand comment.

Even when you're correct about things improving, it's impossible – from personal experience alone – to know the source of the success. It could be the teaching method, or maybe just the force of your personality. If another teacher adopted your methods, things might not be so magical.

And then there is opportunity cost. We all struggle with this one. No matter how good an outcome, I can't possibly know how well things might have gone had I done it differently. The roads not travelled may have gotten me someplace less positive – but not necessarily. You simply can't know.

That's where research comes in … it allows us to avoid overconfidence, selective memory, lack of systematicity, lack of reliable evidence, incorrect causal attribution, and the narrowness of individual experience.

2 Research should not be used selectively.

Many educators use research the same way advertisers and politicians do – selectively, to support their beliefs or claims – rather than trying to figure out how things work or how they could be made to work better.

I wish I had a doughnut for every time a school official has asked me to identify research that could be used to support their new policy! They know what they want to do and want research to sell it, rather than studying the research to determine what they should do.

Cherry-picking an aberrant study outcome that matches one's claims or ignoring a rigorously designed study in favour of one with a preferred outcome may be acceptable debaters' tricks but are bad science. And they can only lead to bad instructional practice.

When it comes to determining what research means, you must pay attention not just to results that you like. Research is at its best when it challenges us to see things differently.

I vividly remember early in my career when Scott Paris challenged our colleagues to wonder why DISTAR, a scripted teaching approach was so effective, despite the fact that most of us despised it. Clearly, we were missing something; our theories were so strong that they were blinding us to the fact that what we didn't like was positive for kids – at least for some kids or under some conditions (the kinds of things that personal experience can't reveal).

3 Research, and the interpretation of research, require consistency.

Admittedly, interpreting research studies is as much an art as science. During the nearly 50 years of my professional career, the interpretation of research has changed dramatically.

It used to be entirely up to the discretion of each individual researcher as to which studies they'd include in a review and what criteria they would use to weigh these studies.

That led to some pretty funky science: research syntheses that identified only studies that supported a particular teaching method or inconsistent criteria for impeaching studies (this study should be ignored because it has a serious design weakness, but then using studies with more acceptable findings even though they suffer the same flaw).

I've been running into this problem a lot lately. Not among researchers, but among practitioners. When I point out a research-supported instructional practice (Reading Recovery) that is inconsistent with phonics theories, I'm told "anything works if it is taught one-on-one". That sounds great, but those same people are offended when there is insufficient attention to phonics instruction, in spite of the evidence supporting phonics such as the National Reading Panel. The problem with this?: the instruction in many of those positive phonics studies was delivered one-on-one.

I'm persuaded that both phonics and Reading Recovery work (because they both have multiple studies of sufficient quality showing their effectiveness). That doesn't mean I think they work equally well, or that they are equally efficient, or that they even accomplish the same things for students.

I agree with those who argue against teaching cueing systems, because research evidence reveals that poor readers use non-orthographic information to identify words and that good readers do not. Teaching kids to read like poor readers makes no sense to me. Nevertheless, Reading Recovery clearly gives kids a learning advantage, and we'd be wise to look hard at it to see why (one study found adding more explicit phonics to it improved kids' progress, and that's a clue that may help us understand what it does and what it doesn't).

The point isn't phonics or Reading Recovery: but when we make those kinds of choices, we need to weigh evidence consistently – treating as the same those studies that challenge our deepest beliefs as well as those that are wind beneath our wings. What works in teaching, who it helps, how it helps them … those are complex questions requiring sound evidence and wise analysis rather than rage and cheap 'hooray for our side' Tweets.

Let's do better.

Timothy Shanahan is Distinguished Professor Emeritus at the University of Illinois at Chicago and was formerly Director of Reading for the Chicago Public Schools, and president of the International Literacy Association. He is a former first-grade teacher and is a parent and grandparent. His website www.shanahanonliteracy.com is popular with parents and teachers.

When it comes to determining what research means, you must pay attention not just to results that you like. Research is at its best when it challenges us to see things differently.

Explainer:

What's the difference between decodable and predictable books, and when should they be used?

Simmone Pogorzelski

Robyn Wheldall

With more focus than ever on providing children with decodable readers, how can they be best used alongside predictable books?

A child's early experiences with books both at home and later in school have the potential to significantly affect future reading performance. Parents play a key role in building oral language and literacy skills in the years prior to school. But it's teachers who are responsible for ensuring children become readers once at school.

While there's much we know about how students learn to read, research on books used to support beginning reading development is sparse. Guidelines provided in the *Australian Curriculum* and the *National Literacy Progressions* complicate matters further. Teachers are required to use two types of texts: decodable and predictable books.

Each book is underpinned by a different theory of reading, arguably in conflict. This contributes to uncertainty about when and how the books might be used.

The difference between decodable and predictable books

Predictable books and their associated instructional strategies align with a whole-language approach to reading.

In this approach, meaning is prioritised. Children are encouraged to draw on background knowledge, memorise a bank of the most common words found in print, and to use cues to guess or predict words based on pictures and the story. This method is not consistent with a *phonics approach*.

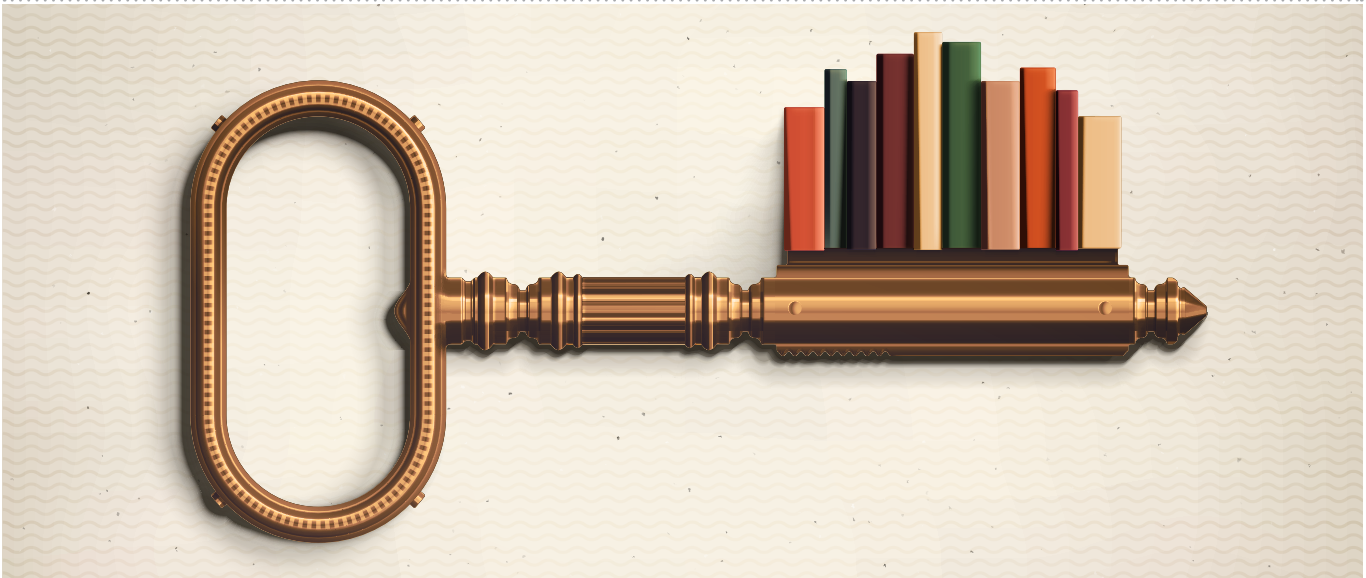
At the earliest levels, *predictable and repetitive sentences* scaffold beginning readers' attempts at unknown words. Word identification is supported by close text to picture matches and familiar themes for children in the early years (such as going to the doctor).

While there is some evidence the repetitive nature of predictable books *facilitates the development of fluency*, the features contained within disadvantage young readers as they do not align with the letter-sound correspondences taught as part of phonics lessons. This is particularly problematic for children who are at risk of later *reading difficulties*.

In comparison, decodable books consist of a high percentage of words in which the letters represent their most common sounds. Decodable books align with a synthetic phonics or code-based approach to reading. This approach teaches children to convert a string of letters (our written code) into sounds before blending them to produce a spoken word.

When reading decodable books, children draw on their accumulating knowledge of the alphabetic code to sound out any unknown words. Irregularly spelt words (for example was, said, the) are also included, and children receive support to read these words, focusing on the sounds if necessary.

There is *mounting evidence* for the use of decodable books to support the development of phonics in beginning readers and older kids who haven't



grasped the code easily. Decodable books have been found to promote self-teaching, helping children read with greater *accuracy and independence*. This leads to *greater gains in reading development*.

The role of books in early reading development

Children need lots of opportunities to practise reading words in books. Given research demonstrates a *synthetic phonics* approach provides young readers with the *most direct route to skilled reading*, there's a strong logical argument for supporting early reading with decodable books.

Until the most recent version of the Australian Curriculum, only predictable books were included in the Foundation and Year One English curricula. The addition of decodable books recognises the critical support they provide beginning readers. But this places teachers in a difficult position because the elaborations in the curriculum documents place more emphasis on the strategies designed primarily for use with predictable books.

Using different books in the classroom

While reading is an extraordinarily complex process, a model of reading called the *Simple View of Reading* is very helpful from an educational perspective. It explains skilled reading as the product of both decoding and language comprehension. This helps us understand what we need to do when teaching children to read, and the types of books they need to support early reading development.

Before they enter school, the majority of children are considered to be in the "pre-alphabetic" stage of reading. In this stage, children have little or no understanding the written code represents the sounds of spoken language. They would not have the skills to use decodable books.

Instead, they recognise words purely by contextual clues and visual features. For example, children know the McDonalds sign because of the big yellow arches (the M) or can read the word 'stop' when they see the sign, but not out of that context.

Predictable books would help the pre-alphabetic reader gain insight into the workings of texts, especially with regard to meaning. In particular making the connection between spoken words – which they are familiar with – and written words, which they are not.

Beyond this stage, predictable texts become less useful because memorisation and meaning-based strategies aren't sustainable long term. Once children have advanced to the partial and full alphabetic stages of reading, usually fairly quickly after starting formal reading instruction, *they benefit more from decodable books* which allow them to apply the alphabetic code.

So where to from here?

There is *no evidence* children benefit from the continued use of decodable books beyond the beginning stages of reading. In the absence of any empirical studies, we suspect it would be a good idea to move children on once they have sufficient letter-sound knowledge and decoding skills that they can apply independently. At this point, the introduction of real books would *benefit students* and provide access to more diverse language structures and vocabulary.

Given what we know about how reading works, it makes sense for children in the early stages of learning to read to be given decodable books to practise and generalise their developing alphabetic skills. At the same time, they will continue to benefit from hearing the rich vocabulary and language forms in the children's books being read with (to) them. It's less clear what predictable texts contribute to beginning reading in schools when considering how reading skills develop. But there is evidence they might have a useful role to play in pre-school prior to the start of formal reading instruction.

This article first appeared in The Conversation.

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Dr Robyn Wheldall is a founding director of MultiLit and is the deputy director of the MultiLit Research Unit. She is an Honorary Fellow of Macquarie University, is a director of the Institute of Special Educators (InSpEd), and is currently on the Council of Learning Difficulties Australia (LDA).

Giving kids a fair go

Greg Ashman

Providing students with an even playing field may require explicit teaching across curriculum areas.

We are all different. Some are born into wealth and a network of contacts. Others are born into poverty. Some pick up particular skills and abilities quickly, whereas others struggle more. This leads to inequality.

However, the world's great liberal democracies are not ruthless Darwinian jungles. The consensus among mainstream politicians is that everyone deserves a fair go and much of politics is about working out what that looks like. What laws do we need to make? How much resource should we target to the disadvantaged?

Now imagine a teacher who sets students in a Year 6 class a project on *The Eureka Rebellion* – a key event in Australia's history.

Each student will bring a range of different resources to this project. Some will be better readers than others. Given that reading is *a combination of decoding skills and background knowledge*, there are two sources of these reading differences.

So let's back up a little. In order to give these students a fair go, let's ensure they have all had a high quality systematic synthetic programme in the preceding years and a knowledge rich curriculum that includes effective vocabulary instruction.

What differences now remain?

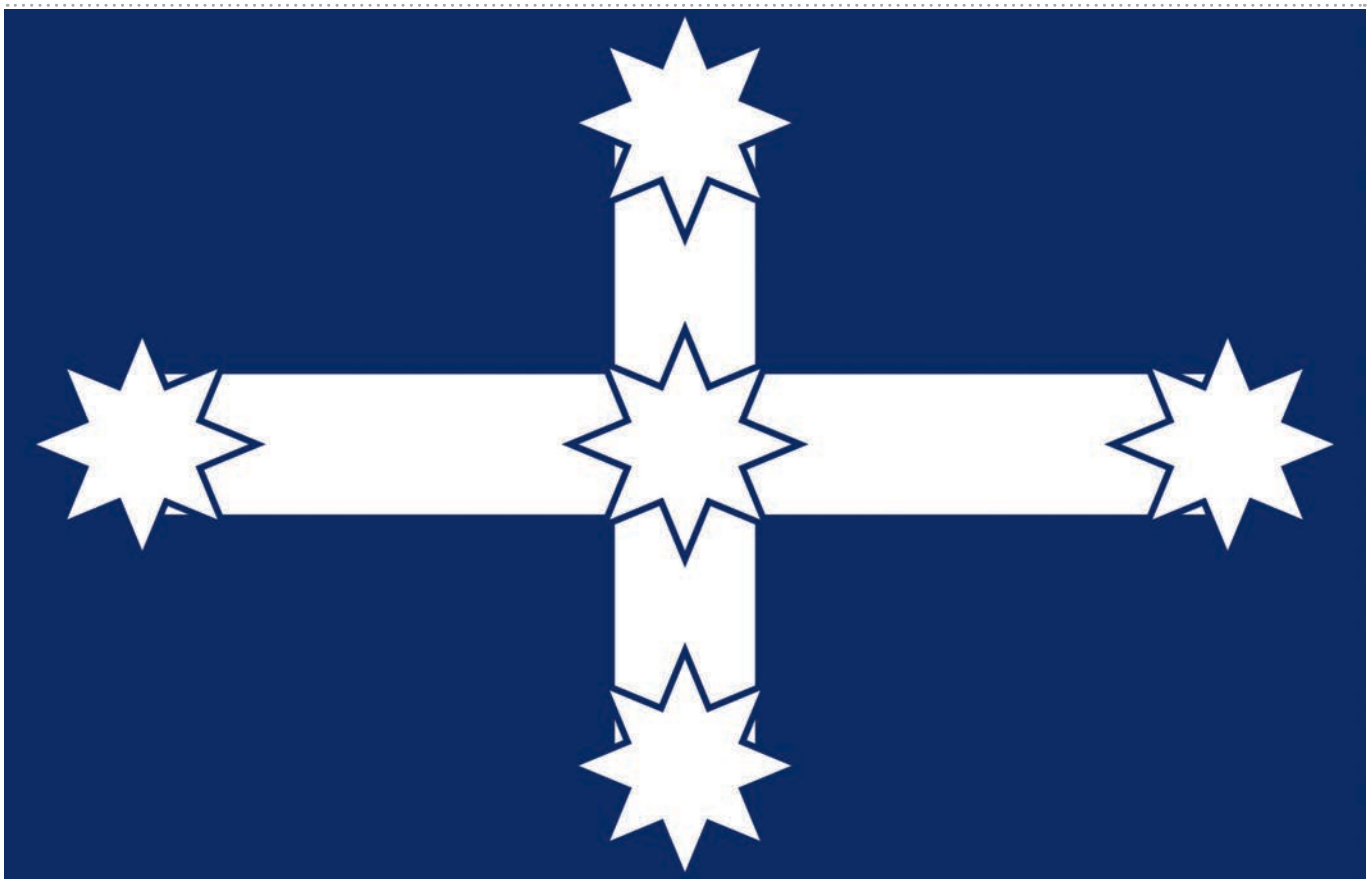
Some students will pick up new concepts about the rebellion more quickly than others. Some will have supportive parents who know about the content and have time to help work with their child on the project. Perhaps they may proof-read, check spellings and make suggestions. Some may even decide to take a trip to Ballarat to check out Sovereign Hill and the Museum of Australian Democracy at Eureka.

Other students may have fewer resources to draw upon. Perhaps their parents work long hours or know little about Australian history. Perhaps there is nowhere suitable to work at home. Perhaps they lack motivation and believe history is boring.

In class, the teacher monitors, intervenes and makes suggestions but nonetheless, some students become quite expert in The Eureka Rebellion whereas others don't learn a great deal about it at all. The former gain a sense of achievement, find the project interesting and start to identify as someone who is good at history. The latter do not – they have not grasped the history or its significance and so it is an unsuccessful and often boring printing and sticking exercise.

I think we have failed to give these students a fair go.

Now imagine a sequence of explicit teaching about The Eureka Rebellion. The teacher assesses background knowledge – do students understand how the colonial system worked or the importance of gold to the economy at



that time? The teacher can then fill any gaps, perhaps through some whole class discussion.

The teacher enthusiastically tells the story of the rebellion, with all its intrinsic drama. Students complete a series of tasks of increasing complexity. Perhaps those who advance rapidly can accelerate to more open-ended tasks. At the end of the sequence, students could produce an essay or a poster or perhaps even give a presentation. Whatever the task, the students are given explicit guidance in how to complete it, ideally drawing on previous knowledge and previous tasks.

This gives all students a fair go. Nobody is harmed – the advantaged can still excel. However, those who lacked resources or were demotivated have an opportunity to understand the story and to achieve. They may discover that the topic is more interesting than they had imagined.

So what?

Most of you reading this post probably don't know about The Eureka Rebellion and yet you are still educated adults. What have we achieved by teaching students about it?

Any single item on the curriculum disappears if you stare too hard at it. You can make a case against anything – see the pundits who appear from time-to-time to denounce quadratic equations or some other arbitrary curriculum dot-point. They are making use of this effect.

As teachers, we can do little about natural endowments or wealth disparities, but we can work to close the knowledge gap.

But knowledge is what you think with. An educated adult has accumulated a lot of knowledge from many different domains over a long period of time. As this knowledge becomes embedded in schema in long-term memory, it becomes effortless to recall and this effortlessness fools us into thinking it is trivial and easy to acquire or that everyone else knows it. It is not and they do not.

As teachers, we can do little about natural endowments or wealth disparities, but we can work to close the knowledge gap.

And closing the knowledge gap gives everyone a fair go.

Greg Ashman is a teacher and head of research at Ballarat Clarendon College, Victoria. He is a prolific blogger and has recently written a book, The Truth about Teaching: An evidence-informed guide for new teachers. *Prior to moving to Australia, Greg worked at a number of comprehensive schools in London.*

What is the Simple View of Reading?

Molly de Lemos

Delving deeper into what the Simple View of Reading can tell us about how children learn to read.

The question as to whether the simple view of reading is a theory about how skilled reading occurs, or if it is a theory about how children learn to read, or both, has often been raised.

My view on this is that the simple view of reading is not meant to be a theory at all; it is a statement of fact. And this is what I think *Hoover and Tunmer (2018)* are saying.

The fact is that reading, in the broader sense of reading comprehension, requires two separate and distinct skills or abilities.

The ability (a) to 'read' the word on the page, that is to convert the written symbol to the spoken word, and (b) to understand the meaning of the written symbol, or series of written symbols, on the page.

The ability to 'read' the word requires the ability to decode the word, using the term 'decode' in its broader sense – that is, the ability to recognise words in print.

As *Hoover and Tunmer (2018)* point out, within the reading literature 'decode' is usually more narrowly defined as a particular way to achieve word recognition. Specifically, decoding is word recognition accomplished through alphabetic coding, which relates the letter sequences within a given word to its pronunciation. However, after frequent exposures to a word recognition of the word becomes automatic, as the orthographic sequence of the word is linked directly to the pronunciation of the word, so the child no longer has to sound out the letters in the word to determine the pronunciation of the word. It is this more direct linkage between the letter sequence and the pronunciation of the word which supports the automaticity requirements for accurate and quick word recognition. To make it clear that the term 'decoding' is being used to refer to both the use of the alphabetic code to 'sound out' new or unfamiliar words, as well as the automatic recognition of familiar words that are stored in orthographic memory, it could perhaps be useful to use the combined term decoding/word recognition to make it clear that this is what is being referred to by the term 'decoding' in the simple view of reading.[1]

The ability to understand the word or words read, on the other hand, is dependent on language comprehension, or knowledge of the spoken language.

I am not sure that anyone would dispute the fact that the ability to read, and to understand what is read, is dependent on these two separate and distinct skills.

And that this applies to both beginning readers and to skilled readers.

In practice, what happens is that beginning readers may have good language comprehension, at a level appropriate for their age, but poor or non-existent decoding skills.

That is, they can't 'read' the words on the page, so they can't derive any meaning from the written text.

Good readers, on the other hand, would have both good decoding skills, based on automatic recognition of a wide range of familiar words, as well as language comprehension appropriate to their age level.

They can therefore read the words on the page, and can also understand the meaning of the words and the information that is conveyed by the written text, at the same level as they would understand the meaning of the text if it was presented as spoken language.

There may also be some individuals who can read the words on the page, but have difficulty in understanding the meaning of the words and the written text because of poor language comprehension. Such people would have equal difficulty in understanding the written text if it was presented as spoken language. This sort of problem would occur in people who have poor language comprehension due to lack of exposure to a rich language background, and have both a limited vocabulary and limited general knowledge. It might also be typical of people who are reading a second language that they are not very familiar with, so that while they may be able to read the words on the page their knowledge of the language is too limited to be able to understand the meaning of the words they are reading, and the way that these words are used and understood in the language, as well as the different connotations of words and perhaps more subtle meanings of particular words.

Different levels of ability on these two skills will determine a person's reading ability at a specific point in time. Understanding that both these skills are required for effective reading will help to determine what sort of help an individual with a reading difficulty needs. Children in the early stages of learning to read, as well as those who have a specific difficulty in decoding words or adult illiterates who have never been taught to read

Good readers, on the other hand, would have both good decoding skills, based on automatic recognition of a wide range of familiar words, as well as language comprehension appropriate to their age level

are most likely to need help with developing decoding/word recognition skills. Individuals whose difficulty with understanding written text stems more from poor language comprehension due to a limited vocabulary or limited general knowledge would benefit more from a program that emphasises development of oral language skills, vocabulary and general knowledge.

This is how I understand the simple view of reading, and the implications of this view based on an understanding of the two separate and distinct skills that underlie the ability to read and comprehend written text.

1 For further information regarding the establishment of 'sight words' in the orthographic lexicon, see the *blog by Stephen Parker* on 'Sight Words, Orthographic Mapping and Self-Teaching'.

Dr Molly de Lemos AM has a background in psychology and educational research. Formerly a Senior Research Officer at the Australian Council for Educational Research, she has worked on a variety of projects relating to conceptual development in young children and the assessment of educational achievement. She has had an ongoing interest in issues relating to pre-school education, early intervention, and the assessment and identification of children with learning difficulties. She is a former President of Learning Difficulties Australia and is currently a member of LDA Council. Her publications include the 2002 ACER review paper Closing the Gap between Research and Practice: Foundations for the Acquisition of Literacy.

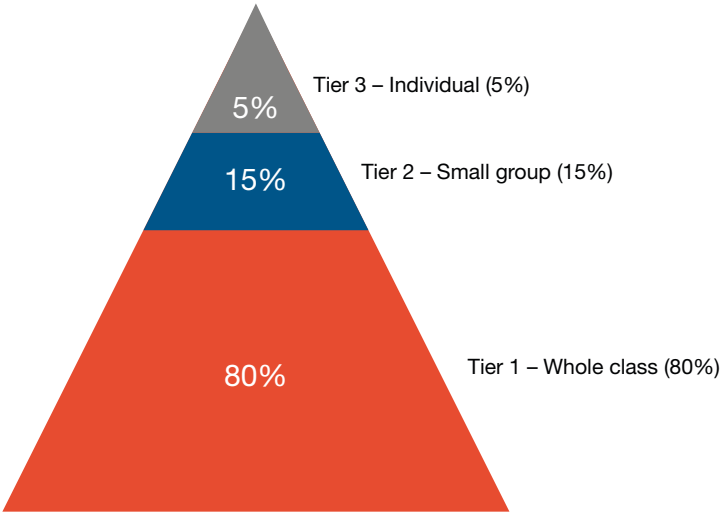
Starting off on the right foot for reading

Kevin Wheldall

Exemplary Tier 1 instruction must be the bedrock of the Response to Intervention model.

Following the demise of the discredited discrepancy model for defining reading disability, whereby children's reading performance was typically compared with their overall general ability, the focus for understanding and, in a sense 'diagnosing' and 'treating', reading disability has turned to the Response to Intervention (RtI) model. Rather than identifying children as having a reading difficulty because their reading performance was significantly inferior to what might be expected from a knowledge of their overall general ability, the RtI model argues for a phased intervention model of increasing support, determined by regular monitoring of the child's reading progress.

In the widely adopted three-tier pyramid model of RtI, it is anticipated that 80% of children will make good progress towards learning to read, given exemplary 'universal' or Tier 1 whole class instruction. A further 15% are likely to be caught up or 'recovered' by the provision of Tier 2 small group supplementary reading instruction based on evidence-based best practice, leaving only 5% who are likely to need even more intensive Tier 3, one-to-one instruction specifically geared to help the individual child learn to read. A diagram of this 'pyramid' model is shown below. This is the received wisdom but this version of the model may be unnecessarily pessimistic. To a large degree, the model hinges on the adequacy of the universal whole-class instruction provided at Tier 1.



Exemplary Tier 1 instruction, in our view, should necessarily address the Five Big Ideas of reading instruction: phonemic awareness, phonics, fluency, vocabulary and comprehension. While, arguably, phonemic awareness, fluency, vocabulary and comprehension are quite often addressed in many whole language lessons in Australia, phonics instruction is often neglected, or taught as a secondary consideration; phonics as the method of last resort. Moreover, when phonics is taught it is more likely to be taught as analytic or incidental phonics rather than as systematic synthetic phonics (SSP). It is little wonder, then, that in some schools (especially those in less advantaged areas), large percentages are found to be in need of Tier 2 provision at the beginning of Year 1; sometimes 50% or more of children are located in the bottom quartile (25%) for reading performance. These children are not necessarily brought up to the level of their peers and so we may see similar percentages at the end of Year 1, in some schools. This has resulted in far too many children who would otherwise have learned to read with relative ease, failing to do so; so-called 'instructional casualties'.

If at least 80% of children are not making adequate progress, as the RtI model predicts that they should, then clearly there is something wrong with the Tier 1, universal, whole class provision on offer. It cannot be considered exemplary. The RtI model effectively provides us with a means of judging the adequacy of our Tier 1 instruction.

Developing programs of effective Tier 1 initial instruction

It was these considerations that led us to expand our focus within MultiLit and to begin to develop programs of exemplary initial instruction in literacy, to meet the needs of all students for the years Foundation (Kindergarten/Reception/Prep) to Year 2. Our MultiLit Product Development Team and the MultiLit Research Unit have been working together for some five years to develop an effective, coordinated and articulated suite of programs of initial instruction, known as InitiaLit. The first of the three programs, InitiaLit-F (for Foundation), for young children in their first year of schooling, was released in 2017. The follow-up program, InitiaLit-1, to continue instruction in reading and related skills for students in their second year of schooling, was released last year (2018), and the final program in the InitiaLit suite, for Year 2 students, will be published later in 2019.

InitiaLit is a suite of instructional programs for whole classes that reflects both advances in scientific research in reading instruction and the concomitant changes in our thinking and conceptualisation of reading instruction within MultiLit. This includes the series of decodable readers that accompany both the Foundation and Year 1 programs. All three of the programs address the Five Big Ideas. They are certainly not exclusively 'phonics programs' but systematic synthetic phonics (SSP) does feature strongly, especially in the first two programs.

Preliminary findings from field trials

During the research and development phase, we have continually carried out numerous field trials of varying levels of sophistication, most of which have not involved formal data collection. They were carried out to see how well the programs worked in the real world of classrooms and changes were made on the basis of teacher feedback and our observations.

We have, however, also carried out preliminary data-based trials of the draft programs in which students were

Table 1. Means (and standard deviations) on measures of early reading skills (standard scores) for Foundation students at pre-, mid- and post-test.

Literacy Variable	N	Standard Score Pre-test (sd)	Standard Score Mid-test (sd)	Standard Score Post-test (sd)
YARC Letter Sound Knowledge	63	80.75 (15.05)	104.32 (10.96)	122.27 (13.19)
YARC Early Word Recognition	63	94.19 (10.77)	106.89 (12.14)	107.17 (13.62)
YARC Phoneme Awareness	63	79.73 (12.81)	96.92 (12.36)	101.22 (12.70)

Table 2. Means (and standard deviations) on measures of reading skills (standard scores) for Year 1 students at pre-, mid- and post-test. *Only 82 of the students produced a scoreable result for Rate.

Literacy Variable	N	Standard Score Pre-test (sd)	Standard Score Mid-test (sd)	Standard Score Post-test (sd)
YARC Reading Accuracy	154	98.17 (13.14)	107.27 (10.88)	107.90 (9.14)
YARC Reading Rate	82*	99.27 (13.16)	112.91 (10.11)	116.15 (8.37)
YARC Reading Comprehension	154	90.49 (17.77)	101.71 (15.41)	107.07 (15.10)

assessed on program entry, again after two terms of instruction and again at the end of the year, by trained research assistants administering standardised tests of reading and related skills. For our present purposes, we shall summarise some of the results from those tests that provide standard scores and percentiles based on Australian norming studies, in this case the York Assessment of Reading for Comprehension (YARC) Early Reading and the YARC Passage Reading Primary.

Looking first at the findings for the Foundation year, 63 students from two schools completed all 126 lessons comprising the InitiaLit-Foundation program. The students made statistically significant average gains in raw score over the year with large effect sizes on all measures of early reading skills, including letter sound knowledge, word recognition and phoneme awareness. But we would expect most children to make some gains, regardless of the type of instruction they received, over the course of a year in school. So, let's look instead at the mean standard scores, which take increasing age into account, to see if they made appreciable gains compared to the norming sample. (Note that these estimates of average performance are conservative because at pre-test, up to 43% of the students scored below the range of standard scores provided by the test and hence the mean average pre-test score is overestimated; at mid-test, 7% of students or less scored below this range.)

Table 1 shows the students' average progress in terms of standard scores on the three YARC Early Reading measures.

These results clearly provide good preliminary evidence for the efficacy of the program; the average gains in standard scores over the year are substantial. But it is the effects on the distribution of scores to which we wish to draw particular attention.

We shall return to this following a brief description of the parallel findings for Year 1 of InitiaLit instruction. Three schools and a total of 153 Year 1 students were involved, all of whom received instruction in the InitiaLit Year 1 program. Again, over the year, these students made statistically significant average gains in raw score with large effect sizes on all measures of reading skill, as we would expect.

Table 2 shows the students' average progress in terms of standard scores on measures of reading skill as measured by the YARC Passage Reading Primary. It should be emphasised that any gains in standard scores represent improvements relative to the students' peer group. Thus, the current results indicate that students made substantial gains, on average, attaining these skills at a greater rate than their peers.

Changes in the standard score distributions

Let us now look at the changes in distribution of scores and relate these to what we might expect from the RtI model. Following InitiaLit, if it is an exemplary Tier 1 program, then there should be only 20% of students remaining in need of Tier 2 (or Tier 3) support.

Further analysis of the Foundation Year sample revealed that there was a considerable shift of students out of the bottom quartile (bottom 25% of same aged students) to the average range (middle 50% of same aged students) and top quartile (top 25% of same aged students) between pre- and post-test.

- At pre-test, 75% of students scored in the bottom quartile for letter sound knowledge and only 6% scored in the top quartile. By post-test, while 6% remained in the bottom quartile, 89% of students scored in the top quartile.
- Similarly, on the measure of phoneme awareness, 79% of students scored in the bottom quartile and only 3% scored in the top quartile at pre-test. By post-test, only 14% of students remained in the bottom quartile and 22% scored in the top quartile.
- For word recognition, 19% of students were in the bottom quartile

and 8% were in the top quartile at pre-test. By post-test, 16% scored in the bottom quartile and 51% were now in the top quartile.

These results indicate that InitiaLit-F may have helped to reduce the number of students who might have struggled to learn to read (those in the bottom quartile) while not limiting the growth of higher performing students, as indicated by those moving from the average range to the top quartile.

Similarly, further analysis of the Year 1 sample also showed that there was a considerable shift of students out of the bottom quartile to the average range and top quartile between pre- and post-test.

- 35% of students scored in the bottom quartile at pre-test, for reading accuracy and 26% scored in the top quartile. At post-test, while only 6% remained in the bottom quartile, the majority (51%) of students scored in the top quartile.
- Similarly, for reading rate, at pre-test 28% of students scored in the bottom quartile and 23% scored in the top quartile. By post-test, only 1% of students remained in the bottom quartile and 83% scored in the top quartile.
- For reading comprehension, 43% of students were in the bottom quartile and 27% were in the top quartile at pre-test. By post-test, only 16% remained in the bottom quartile and 47% were now in the top quartile.

Again, these results for Year 1 indicate that InitiaLit-1 may have helped to reduce the number of students who might have struggled to learn to read (those in the bottom quartile) while not limiting the growth of higher performing students, as indicated by those moving from the average range to the top quartile.

Conclusions

Arguing from RtI theory and the above, an exemplary Tier 1 whole class program should be effective for 80% of the sample, leaving only 20% in need of Tiers 2 and 3. So we might expect at least 20% to be in the bottom quartile by the end of Year 1 after one year of Initialit instruction. But InitiaLit, on the whole, is typically delivering more than this, as the figures above show; on no measure for either InitiaLit Foundation or InitiaLit Year 1 are the post-test percentages in the bottom quartile greater than 20%, and usually substantially less. The need for further Tier 2 or 3 instruction would appear to be greatly reduced. (Note that a large proportion of the Year 1 sample were from LOTE backgrounds and this may partly explain the figure of 16% for comprehension.)

These preliminary data indicate that students receiving instruction in the InitiaLit programs can make excellent gains in measures of early reading and related skills over and above the typical progress of their same aged peers. They also indicate that the program may assist struggling students to catch up, as indicated by those students moving out of the bottom quartile, while not limiting the growth of higher performing students, as indicated by the movements into the top quartile. An example of this is shown in the bar graph below for reading accuracy performance of the InitiaLit-1 students across the year.

To this extent, the most popular version of the three tier, pyramid model of RtI may be viewed as somewhat pessimistic about the percentages of students who are likely to be in need of Tiers 2 and 3 levels of instruction, following exemplary Tier 1 whole class instruction. These preliminary findings from our trials suggest that far fewer students will need additional support following Tier 1 programs like InitiaLit. This will have the effect of providing support for struggling young readers much more manageable for most schools because far fewer students will need this level of additional support and, hence are more likely to be 'recovered' early in their acquisition of reading and related skills.

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Vale Siegfried Engelmann, father of Direct Instruction

Kerry Hempenstall

Siegfried (Zig) Engelmann, the main developer of the educational model known as Direct Instruction (DI), died at his home on February 15, 2019 aged 87 years, after some months of illness. Zig's career in education was both extended and productive. He received nine funded research grants, and wrote 18 books, 27 book chapters and monographs, and 47 articles. In conjunction with colleagues, he was primarily responsible for an array of more than 100 educational programs, including 20 in reading, eight in spelling, 18 in mathematics, 10 in language, and three in writing. Probably the most well-known of these are *Reading Mastery*, *Spelling Mastery*, and *Corrective Reading*. In recognition of his contribution to education, he was awarded a Professorship in Education at the University of Oregon. Engelmann was also the director of the non-profit National Institute for Direct Instruction (NIFDI).

What is Zig's contribution to education?

Zig had an unusual pathway into education. He was working in advertising, and was interested in how an advertising message might be structured so that it was more likely to be remembered by children. Following this slightly chilling start, he became fascinated with the possibly broader implications of this work in the education field.

Without denying the influence of genetics on student attainment, he asked, what are the limits on instruction as a strong influence on learning? Can instruction be designed so as to increase this influence – whether on young, struggling students, second language learners, gifted students, or average students? This was a major advance, involving a shift in educational emphasis from the qualities of the learner to the quality of the teaching content and process. So, he didn't develop a theory of learning, but rather a theory of instruction.

For more than 50 years Engelmann productively addressed the conundrum of why some students learn following typical classroom instruction and some don't. In avoiding the learner-at-fault explanation for the latter event, he began analyses of stimuli, communication, and behaviour as the important addressable variables. He developed a logical technique for designing curriculum with an emphasis on avoiding ambiguities that might distract students. He also considered the ghost-in-the-machine – how a curriculum's effectiveness also depends on a host of presentation elements. So, his approach addresses how effectively a teacher, working from a curriculum, ensures students master the curriculum concepts/knowledge/tasks/routines. By almost obsessive attention to these details, instructional quality becomes a major

influence on intervention success.

That the philosophy and principles of instruction have been translated into so many instructional domains, such as reading, writing, language, spelling, maths, and spoken English, is further testimony to their validity. For those interested in detail about his programs, there are many journal and web articles. See the NIFDI pages and Zig's own site. See also the Engelmann and Carnine classic, *Theory of Instructio*n.

What is the background to his approach?

Empathy for students who suffer the indignity of sustained educational failure clearly drove Engelmann's endeavours. This is reflected in his shifting of the focus from student responsibility to an instructional focus. This empathy was not simply a hollow bemoaning of a supposedly inevitable reality, but a determination to do something productive about it. His capacity to show how this can be achieved has changed the life trajectory of many struggling students.

Following his death, there will be much written about the substance of his work. However, Zig's own words offer a picture of the person and his story of Direct Instruction.

> *If we are humanists, we begin with the obvious fact that the children we work with are perfectly capable of learning anything that we have to teach. We further recognize that we should be able to engineer the learning so that it is reinforcing – perhaps not "fun," but challenging and engaging. We then proceed to do it – not to continue talking about it. We try to control these variables that are potentially within our control so that they facilitate learning. We train the teacher, design the program, work out a reasonable daily schedule, and leave NOTHING TO CHANCE. We monitor and we respond quickly to problems. We respond quickly and effectively because we consider the problems moral and we conceive of ourselves as providing a uniquely important function – particularly for those children who would most certainly fail without our concerted help.*
>
> *We function as advocates for the children, with the understanding that if we fail, the children will be seriously pre-empted from doing things with their lives, such as having important career options and achieving some potential values for society. We should respond to inadequate teaching as we would to problems of physical abuse. Just as our sense of humanity would not permit us to allow child abuse in the physical sense, we should not tolerate it in the cognitive setting.*

We function as advocates for the children, with the understanding that if we fail, the children will be seriously pre-empted from doing things with their lives

> *We should be intolerant because we know what can be achieved if children are taught appropriately. We know that the intellectual crippling of children is caused overwhelmingly by faulty instruction – not by faulty children.* (p. 725)

Attention to detail in DI:

> *[DI involves] picky details of how the tasks are formulated, how the example sets are designed, how the details of lessons are organized and sequenced from one lesson to the next so that only about 10-15% of each lesson presents brand new material, how exercises are designed so they are unambiguous about details of the content, and therefore, how the analysis of the content permits the progressive and systematic transmission of the content to the average and low-performing students. If you think about it, you see that the program has to be an orchestration of detail.*

Effectiveness of DI

The most famous of the evaluations was a massive 700,000 student study in the USA called Project Follow Through. It involved implementing numerous educational models to determine which had the strongest impact on the skill attainment of disadvantaged students. Engelmann's Direct Instruction produced the strongest results in reading, math, spelling, language, and even self-esteem. For more recent research, see the Stockard et al. extensive review of 50 years of DI research.

It is perhaps too early to make firm judgements about Zig's legacy. Perhaps the acceptance in the education domain that eluded him during his lifetime will eventually occur as the movement towards evidence-based practice continues to gather momentum.

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Book Review: *Reading for Life*

Nicola Bell

Reading for Life is written by Lyn Stone, who works in Victoria as a linguist, school consultant and tutor of children with literacy difficulties. Stone is a fierce and ardent advocate for evidence-based literacy instruction, and she expresses this position well, employing a persuasive and sharp style of writing from the first page to the last.

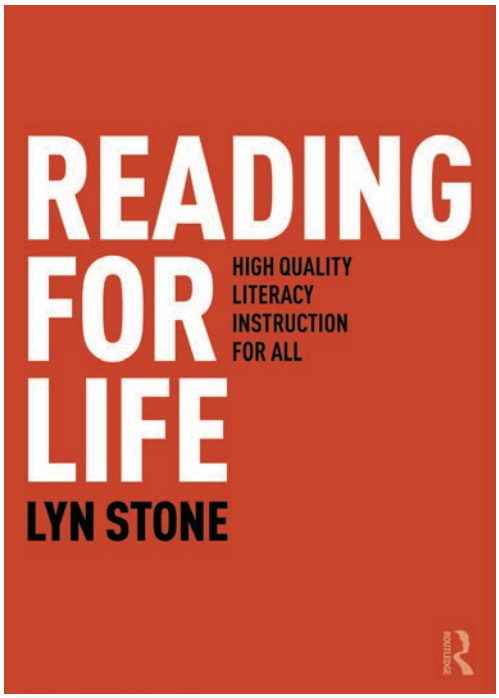
The book's content is roughly divided into four sections. The first section provides some background from the author's perspective about common linguistic concepts and terms. Being a word nerd, I would have liked to read more about how the referenced theoretical reading models came about and fitted together – especially from the author's perspective as a linguist. That said, this part of the book is still interesting and easily digested. The key argument I drew from the early chapters was that, "like word-level automaticity, understanding what you read is the destination, not the journey" (p. 36). This quote effectively captures a point often ignored by advocates of Whole Language – that it is not okay to infer anything concrete about reading acquisition from examining the end product (i.e., skilled reading).

The second section of the book ("The Reading Wars") contained my favourite chapters. The historical context provided by Stone's descriptions of national reports and government inquiries relating to phonics instruction was thought-provoking, and very helpful to those who might stumble, uninformed (or misinformed), into the trenches of the reading wars.

The third section follows nicely on from this contextual information, to describe the biases that contribute to anti-scientific thinking around literacy acquisition. Towards the end is also a poignant explanation of why not to classify dyslexia as a "gift": as quoted by Stone's daughter, "My strengths are my own and not the result of dyslexia" (p. 133).

The final chapters of the book contain practical examples of techniques to target – among other things – handwriting, phonological awareness, phonics, fluency and comprehension. It is clear from reading these chapters that the author has substantial knowledge of the word-level conventions guiding English spelling patterns. Here and elsewhere, the author's message could have benefited from fewer, clearer subsections, as well as additional references to the research literature. Nevertheless, readers with a similar degree of expertise to Stone would likely find this section full of valuable tips to incorporate into their practice.

On the whole, I see *Reading for Life* as a useful addition to my bookshelf. In particular, the "cheat sheet" of major players in the reading wars (p. 50-63) is a great idea, and the author's perspective on dyslexia (p. 128-137) is well expressed. The frequent references to metaphors and the blog-style length and tone of each chapter also make this book a quick and easy reference guide for a variety of topics. As a consequence, Stone has successfully fulfilled her aim in producing a "starting point to help parents and teachers demand and supply a better deal for all children" (p. xvi).



Nicola Bell works in the MultiLit Research Unit as a postdoctoral research fellow. Nicola recently submitted her PhD ("Literacy development in children with cochlear implants") to the University of Queensland. Her research interests extend to language and literacy development in all school-age children.

Book review:
The Truth about Teaching: An Evidence-Informed Guide for New Teachers

Greg Ashman's recent book, *The Truth about Teaching: An Evidence-Informed Guide for New Teachers* is not just appropriate for new teachers – many existing teachers could benefit from reading it too.

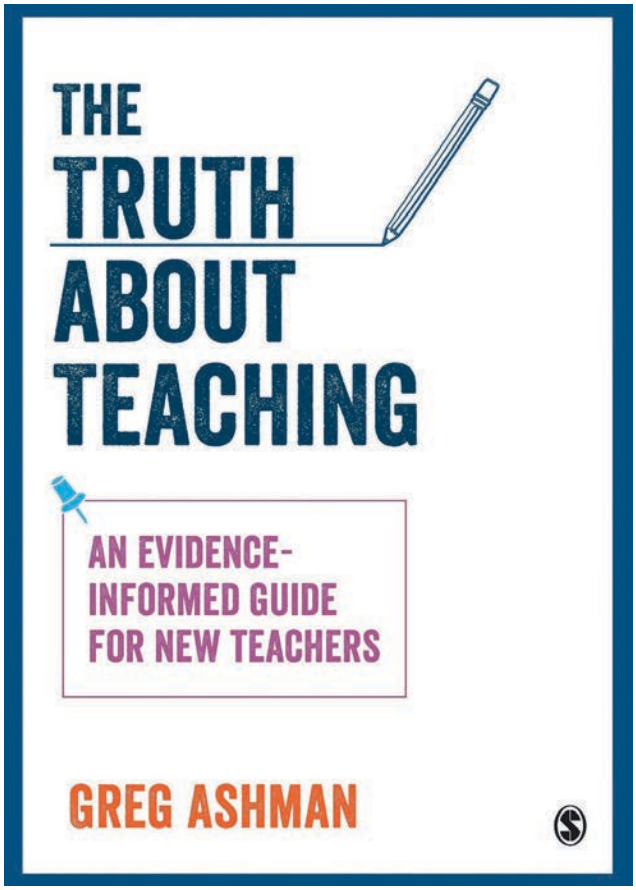
Alison Madelaine

It addresses several current, and often controversial aspects of teaching and education. Ashman starts by providing some context for the reader in the form of a discussion about some of the history of education, including the different approaches to education (e.g., constructivism). Those studying to become teachers may not be exposed to this type of critical look at the history of education in their courses.

One of the main themes of Ashman's book, discussed across several chapters, is that of teacher workload (and being a classroom teacher himself, this is a credible account). There is a chapter devoted to classroom management in which he covers behaviour management, an area where *teachers generally get inadequate training*. While this chapter is about much more than just classroom behaviour, Ashman does give some quite practical examples of strategies that teachers can use in their classroom (e.g., catch them being good, criticise privately, follow through), and the chapter itself serves as a good introduction. Ashman takes a proactive approach to classroom management with a view to protecting/maximising instructional time. Even if new teachers didn't get anything else in their teacher education program, they would get a lot of good information on classroom management just from this chapter.

The emotional load of teaching is considered, as is the cognitive load (plan your lessons to reduce this), and the time involved in teaching and related activities. Chapter 8 looks at marking and feedback and it seems it is time for a bit of a rethink of this. Although it is true that marking and feedback are not the same thing, teachers spend an awful lot of time giving written feedback as part of their marking. Ashman reminds us all that, "teaching is a more efficient way of providing feedback than writing to all of your students and so this should be a primary method" (p. 126). So, most feedback should be given immediately and verbally, as part of the lesson – how freeing is that?!

A chapter is devoted to explicit teaching (and another to alternatives to this). Ashman discusses the different definitions of 'direct instruction' and why this can be a problematic term, and gives his take on explicit teaching, which is teacher-led, but also highly interactive. Instructional context is explored (whole class versus small group teaching). It is true there is a trade-off here, but assuming there is only one teacher in the classroom, whole class teaching is likely to be more efficient and produce better outcomes than lots of small group instruction in which students engage mainly in independent work. Ashman articulates the myth that explicit teaching is only effective for teaching basic skills and that alternative approaches are needed for more complex concepts, higher-order skills, and critical thinking: "critical thinking, something that all teachers wish to develop in their students, rests upon knowledge of the matter that you wish to think critically about" (p. 89). This quote



"Critical thinking, something that all teachers wish to develop in their students, rests upon knowledge of the matter that you wish to think critically about"

- Greg Ashman

sums up the problem with expecting students to perform higher-order tasks without having a good foundation in the necessary lower-order skills.

In Chapter 10, Ashman takes on the phonics debate, and again, cites the evidence from three major reports on the role of phonics in learning to read. He states that synthetic phonics is the superior method, and as much as I would love this to be the case, there is some question about *whether the available evidence supports this claim*. Ashman gives some of the history behind the reading wars (citing the work of Jeanne Chall and Marilyn Jager Adams), and again, makes the point that those who advocate for a more systematic approach to teaching phonics don't exclude the use of good quality children's literature (as many Whole Language advocates would have us believe).

The last chapter is a very interesting one in which Ashman considers whether teaching is a profession. In answering this question, he looks to other professions like law and medicine, and concludes that teaching seems to be somewhere between an occupation and a profession. Ashman suggests some ways of moving teaching closer to becoming a profession; for example, it would need to regulate itself and develop a shared understanding of which teaching actions are appropriate and which are not. These both seem like big asks in 2019. Another suggestion is that teachers become more interested in and actually engage with education research. This seems more doable, but of course relies on education research, and how to consume it (with a critical eye), being included in pre-service teacher education programs.

The Truth about Teaching is definitely recommended for those studying teaching, those new to teaching, and even those who may have been in the classroom for a few years and would like to rethink the way they teach.

Dr Alison Madelaine is a Senior Research Fellow within the MultiLit Research Unit at MultiLit Pty Ltd. She is also Clinical Director of the MultiLit Literacy Centres and is involved in the development of InitiaLit–2, a whole-class reading and spelling program for all children in the third year of schooling. Alison has had hands-on experience teaching students with reading difficulties in Australia and South Carolina, USA, and she has also provided consultation to the delivery of MultiLit's literacy programs to disadvantaged students in several projects, including those in Cape York in far north Queensland, inner city, Sydney, and in Sydney's Western suburbs.

Nomanis Notes
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Does music training enhance intelligence and learning to read?

Kerry Hempenstall

Statement of the problem

Learning to read written English is difficult for many children. There have been numerous attempts to find innovative means to improve this situation.

Proposed solution/intervention

Many people, including children, find listening to music pleasurable. If it could be shown that learning music, an intellectual skill, transfers to intelligence and/or reading development, then music education may become an attractive curriculum option in school settings, and for parents seeking to enhance their children's development. It would have even more appeal if it could promote reading achievement among young readers struggling with literacy.

The theoretical rationale

Learning and playing music is an intellectually demanding activity, and some research has suggested other language and cognitive abilities may be enhanced. It is accepted that repeatedly engaging in any intellectual activity will evoke detectable brain changes. Some of these brain changes may be helpful to reading and intellectual development. For example, increased phonological awareness skills have been associated with music training, as have a variety of auditory skills, such as improved sense of pitch and rhythm. Given the association between phonological awareness and reading, a causal link is feasible, though perhaps restricted to beginning readers. Further, some suggest that training has an even broader impact, including on general cognitive functioning. Of course, there are numerous types and durations of musical instruction and it is unclear whether they would all have a similar effect. Additionally, any effect would be presumably predicated on students' motivation to maintain the training input and level of practice required, over a significant period of time.

What does the research say? What is the evidence for its efficacy?

Numerous studies have found a correlation between the two pursuits, but it has yet to be shown that music training can actually cause reading or IQ improvement. The explanation for the association may be simply that brighter individuals are more likely to engage in music programs, and there is evidence that this is so. Unfortunately, many of these supportive studies are not well designed, and research reviews have found an inverse relationship between the reported effect sizes of the music training on reading skills and the methodological quality of the study design. So, high quality research reports little or no evidence for the transfer effect. To date, there have been too few randomised control trials (RCTs) to clarify if, and under what conditions, music training might cause reading skill or IQ enhancement. More recent reviews and meta-analyses have found little or no far transfer. As to reading effects, future studies of a high enough quality may show some benefits from some music training programs for some students. However, for students whose reading is at risk, time is too valuable to use on programs lacking evidence of any powerful effects.

Conclusion

Music-training programs have numerous cultural benefits for participants. However, if the purpose for their introduction is to have a direct and significant impact on academic outcomes, music training is not recommended based on current evidence.

Key references

Dumont, E., Syurina, E.V., Feron F.J.M., & van Hooren, S. (2017). Music interventions and child development: A critical review and further directions. *Frontiers in Psychology, 8*, 694

Gordon, R.L., Fehd, H.M., & McCandliss, B.D. (2015). Does music training enhance literacy skills? A meta-analysis. *Frontiers of Psychology, 6*, 1777. https://doi.org/10.3389/fpsyg.2015.01777

Sala, G., & Gobet, F. (2017). When the music's over. Does music skill transfer to children's and young adolescents' cognitive and academic skills? A meta-analysis. *Educational Research Review, 20*, 55-67.

Further references: https://tinyurl.com/ycf3x9aa