



Evidence-based reading instruction: How far have we come and what barriers remain?

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Include, Improve, Inspire conference

Brisbane, 20 September 2019

About MultiLit

- MultiLit started as a research initiative of Macquarie University.
- Conducts research on reading development and reading instruction through the MultiLit Research Unit.
- Produces comprehensive reading programs for whole-class instruction and for small group and individual intervention.
- Programs are based on scientific evidence and are intensively trialed and evaluated.
- MultiLit has reading clinics that provide assessment and instructional interventions for struggling readers.
- Publishes a range of books and resources including decodable readers.

MultiLit reading programs

MultiLit provides a suite of reading programs for instruction and intervention

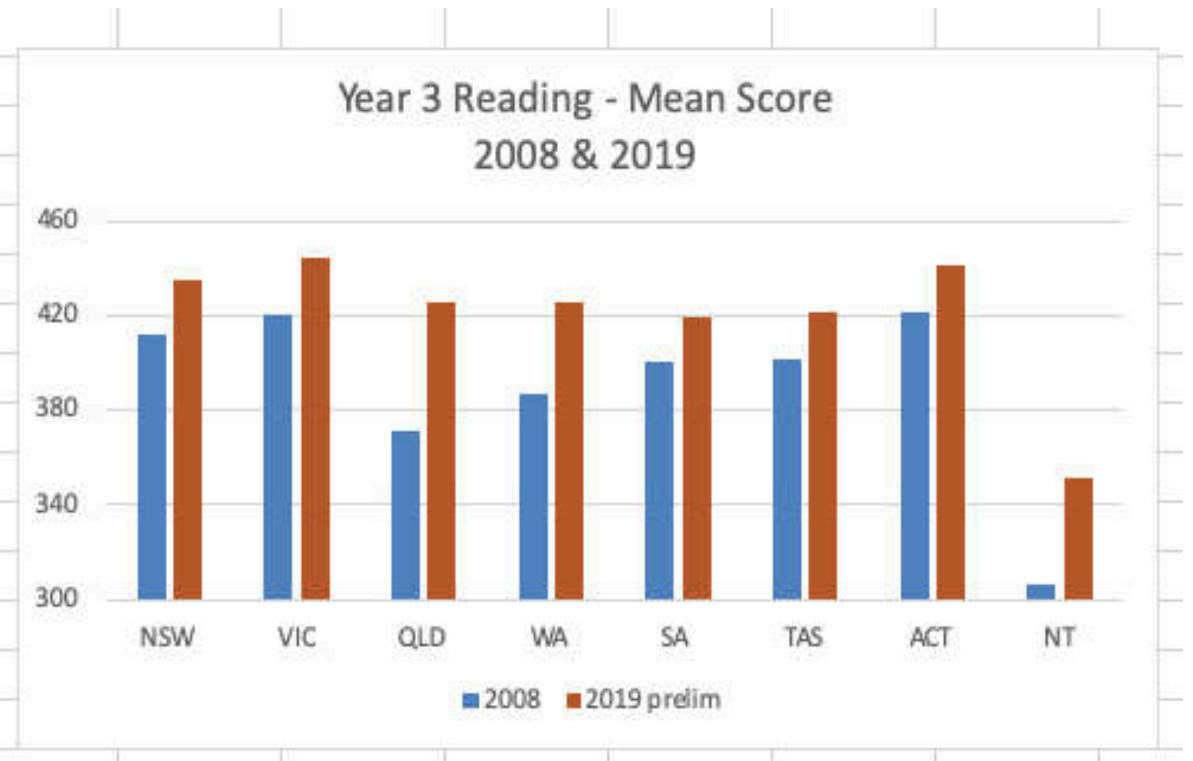
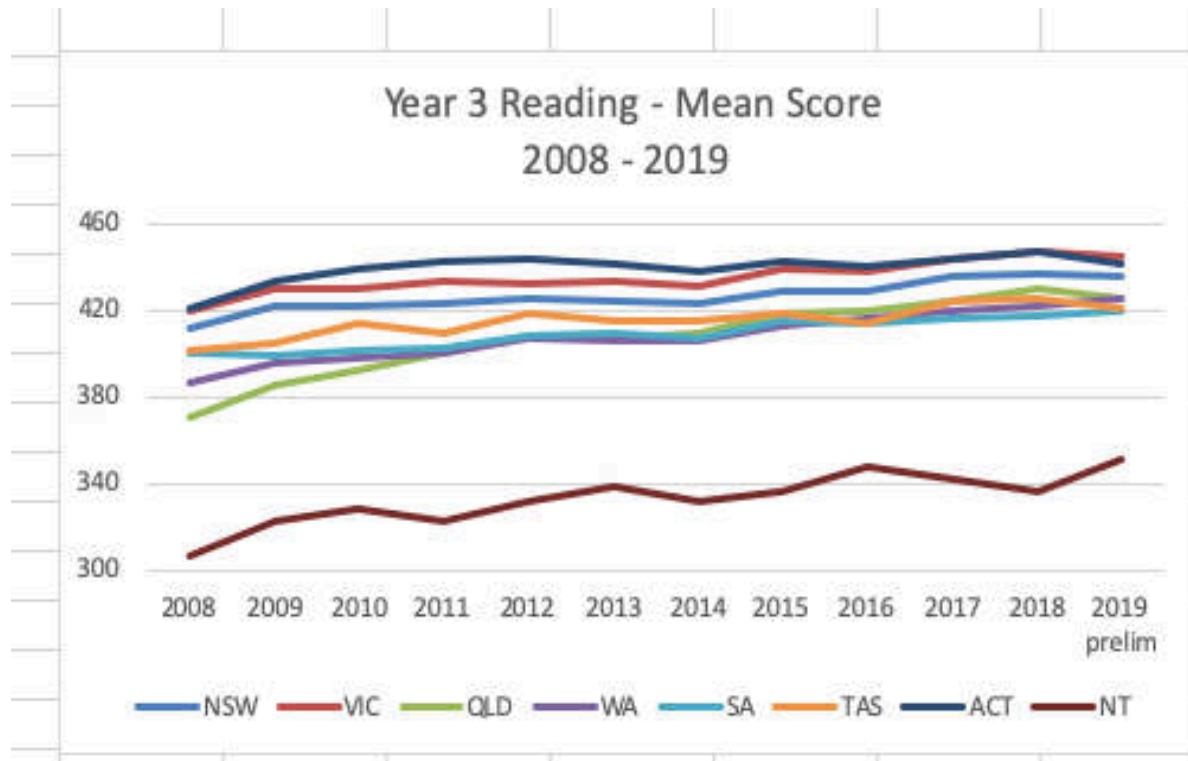
- PreLit: preschool literacy program
- InitiaLit: whole-class instruction for Foundation to Year 2
- MiniLit: small-group program for struggling readers in Year 1
- MacqLit: small-group program for struggling readers in Year 3+
- Reading Tutor Program: one-to-one program for struggling readers in Year 3+

About Five from Five

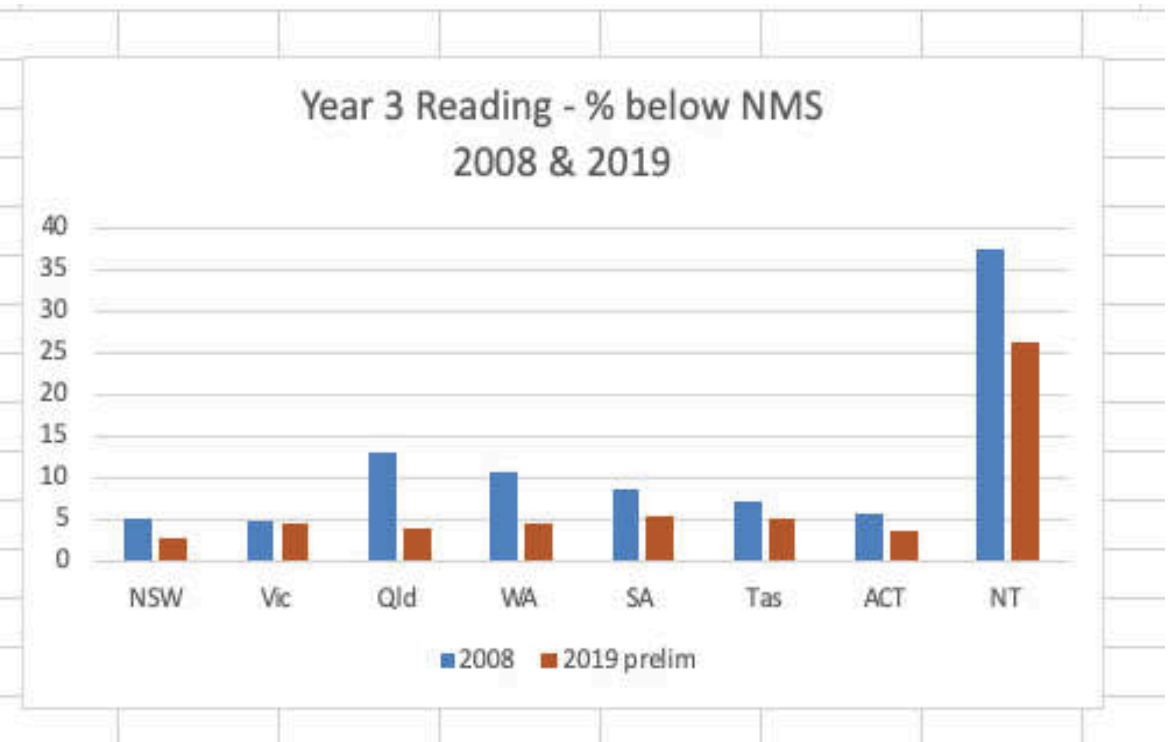
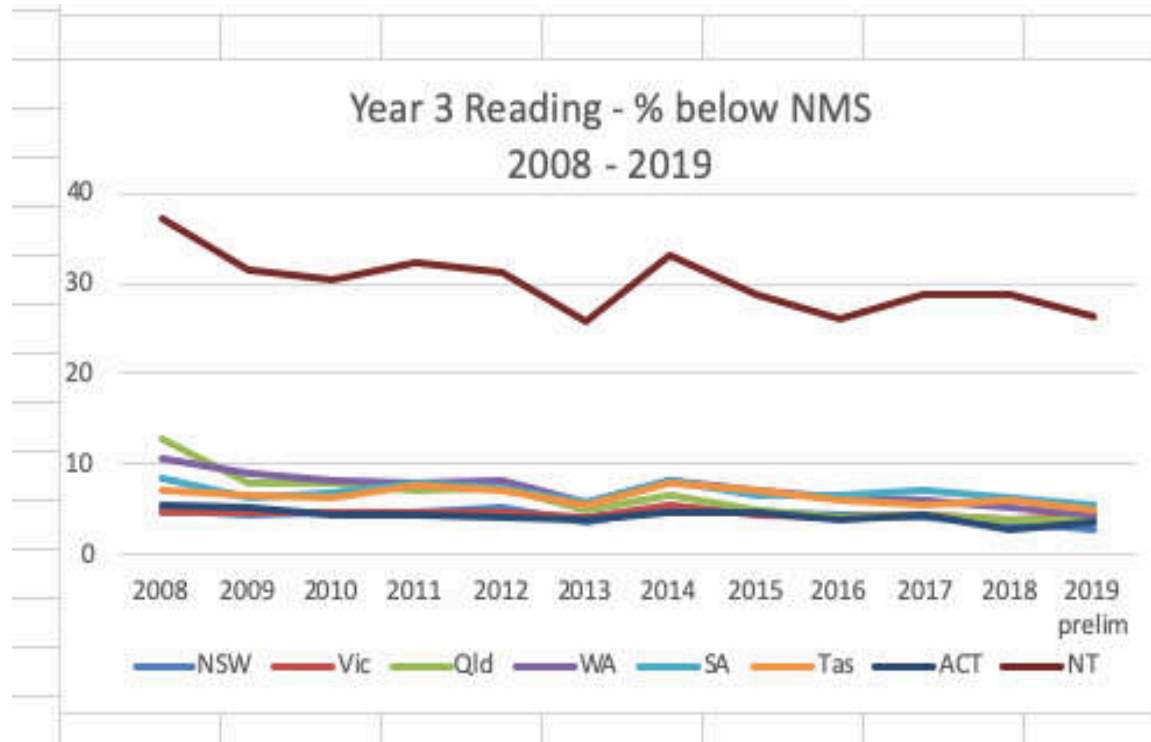
- Five from Five is an initiative to bridge the gap between classroom practice and the research on effective reading instruction.
- The Five from Five website presents information on research about reading development and evidence-based reading instruction and intervention.
- Five from Five advocates for evidence-based reading instruction through publications, presentations, traditional and social media, and engagement with politicians, policy makers, and peak bodies.
- Five from Five began as an initiative of The Centre for Independent Studies and is now supported by MultiLit.

Indicators of achievement

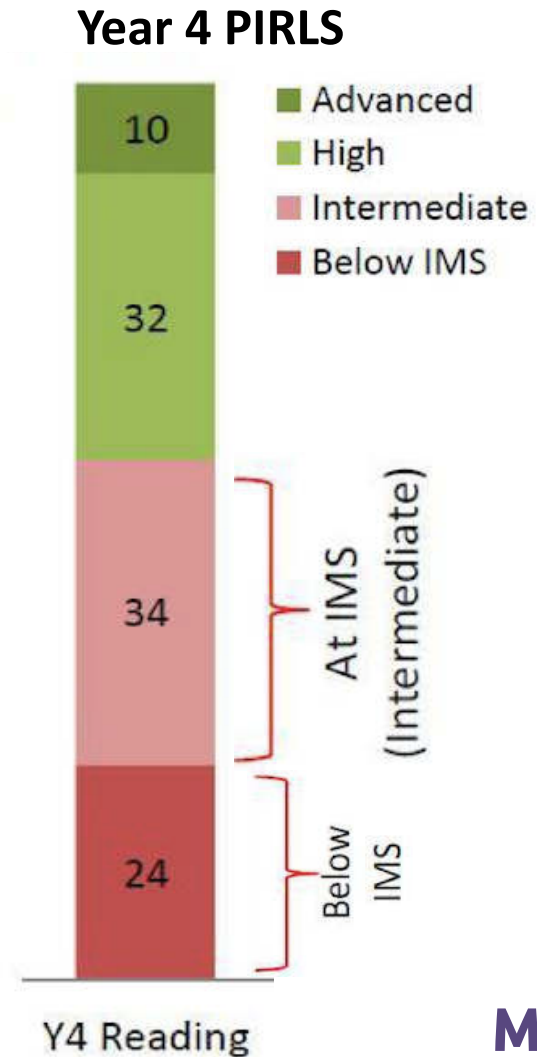
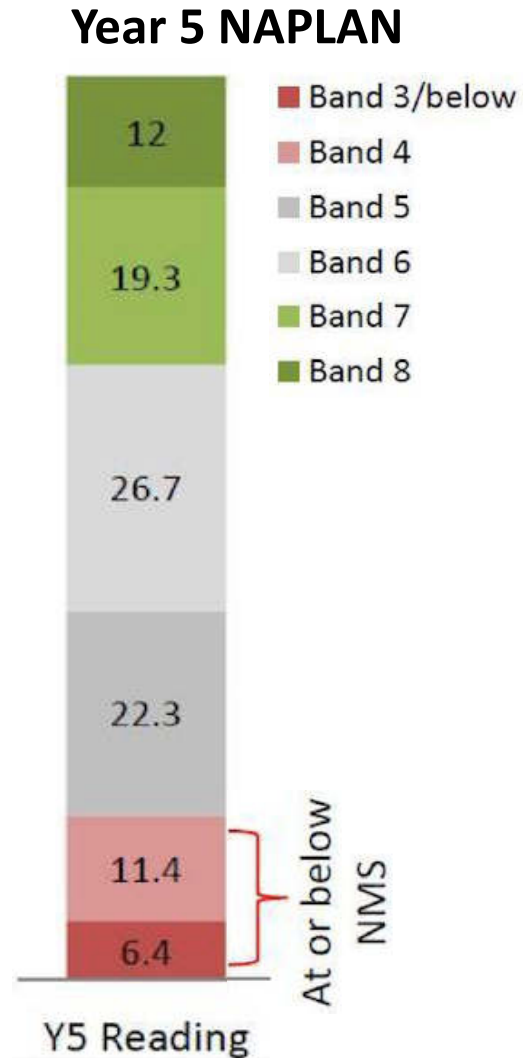
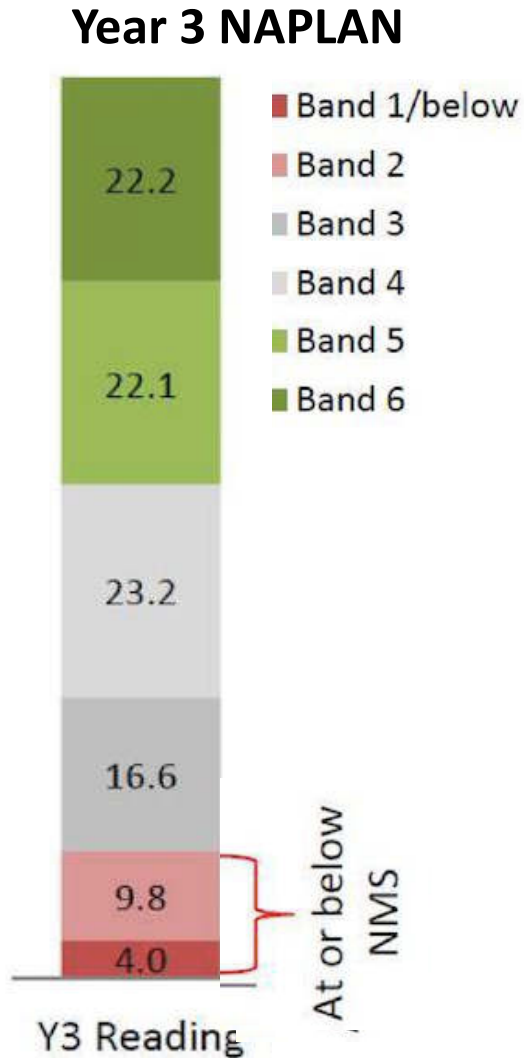
NAPLAN 2008 - 2019: Mean scores



NAPLAN 2008 - 2019: % below minimum standard

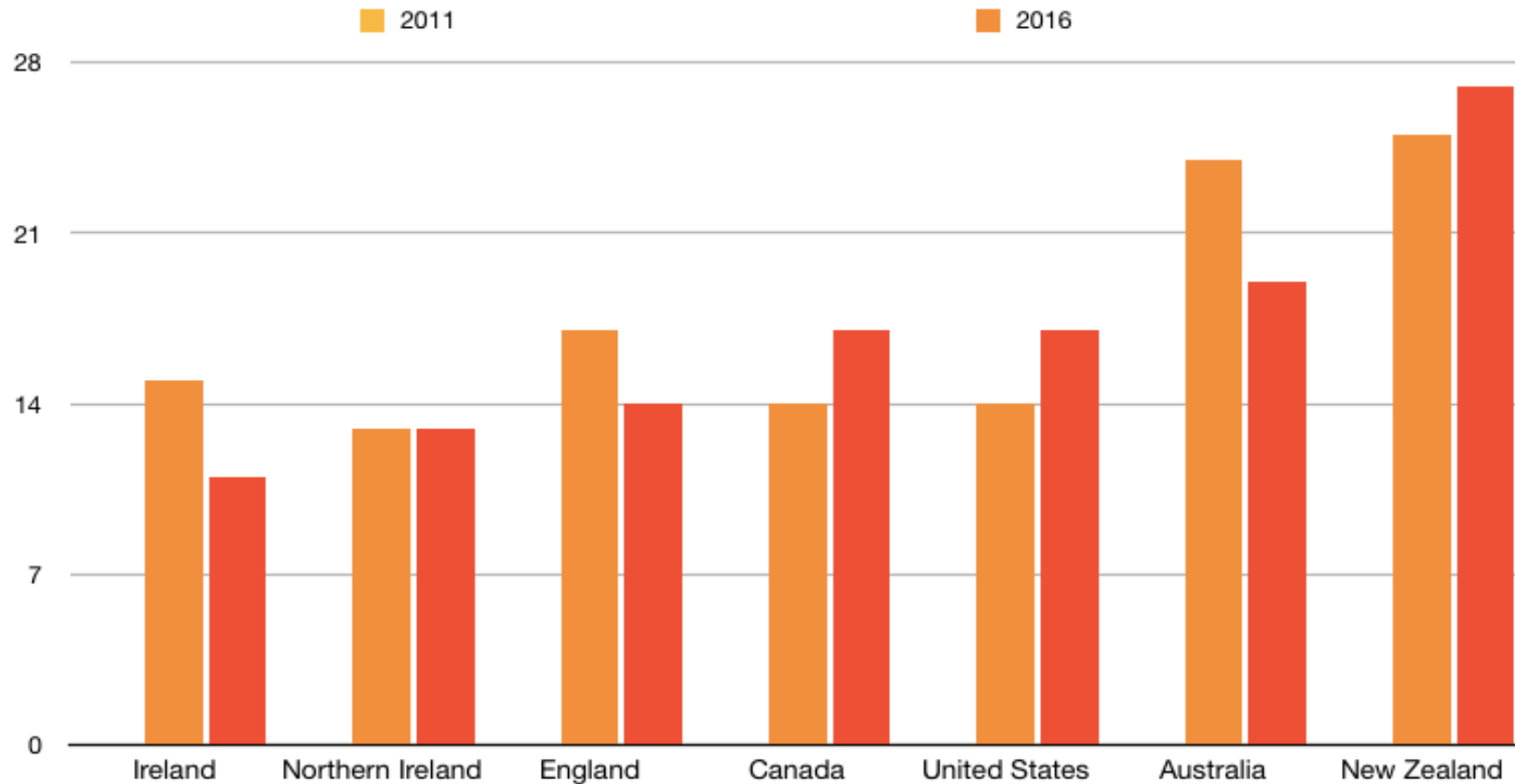


NAPLAN's minimum standard is very low



Primary school reading (Year 4): PIRLS 2011 & 2016

Percentage of students below the intermediate benchmark



PISA 2000 – 2015: Mean scores

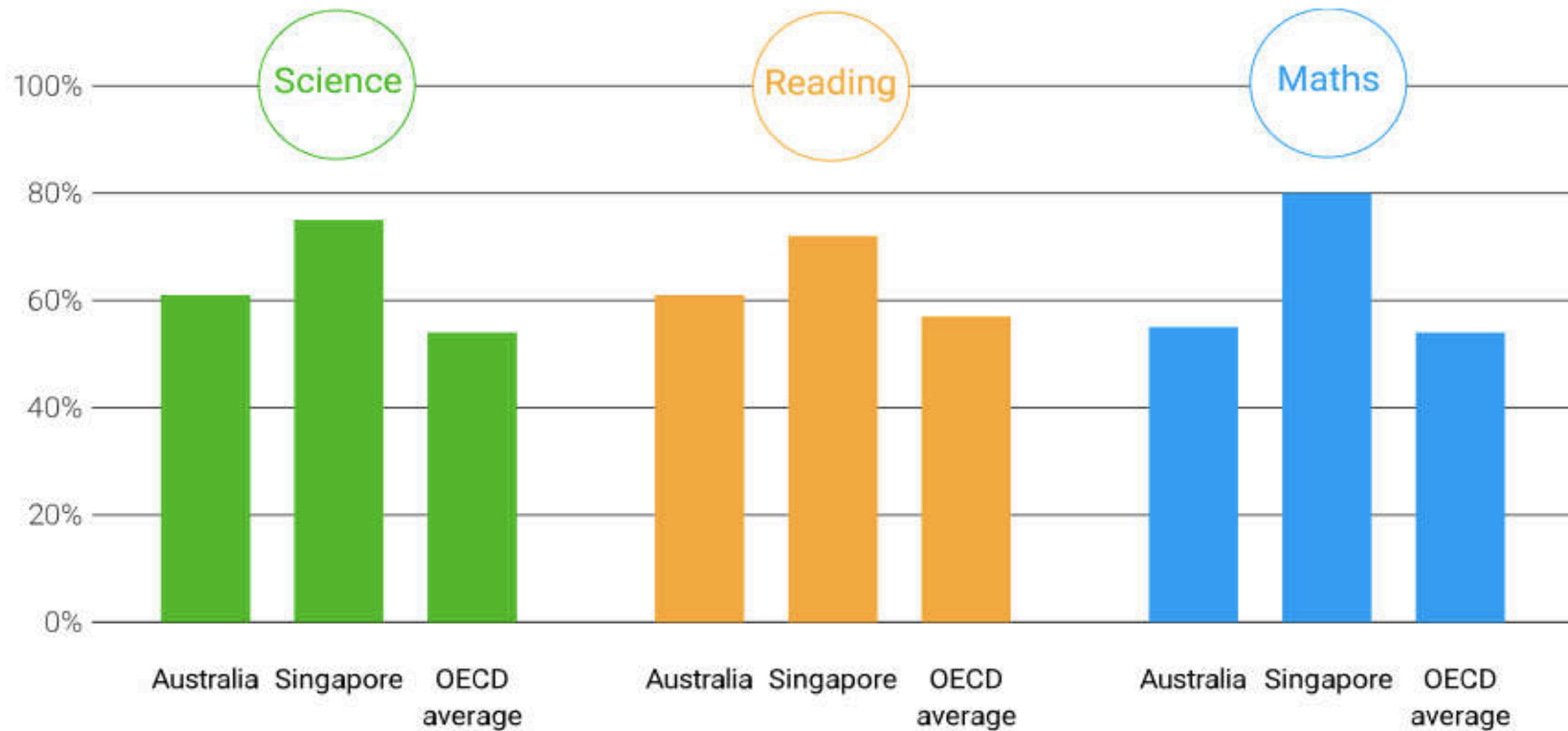


<https://www.acer.org/au/ozpisa/key-findings>

PISA 2015: National proficient standard

Students achieving national proficient standard

Level 3 or above



Year 9 NAPLAN 2019

Reading:
92% achieving national
minimum standard

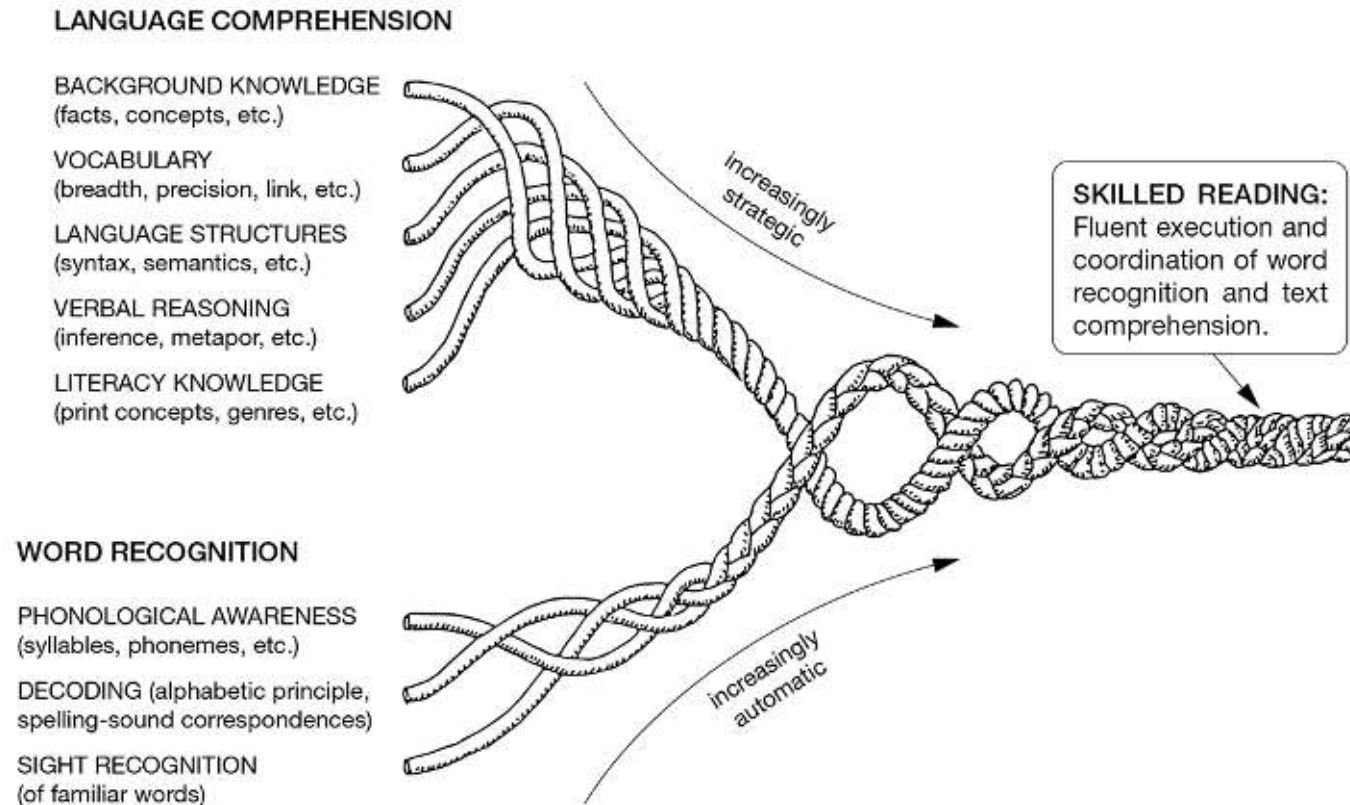
Numeracy:
96.3% achieving national
minimum standard

<https://www.acer.org/au/ozpisa/key-findings>

What is evidence-based reading instruction?

Teaching reading is a job for experts

SCARBOROUGH'S READING ROPE (2001)



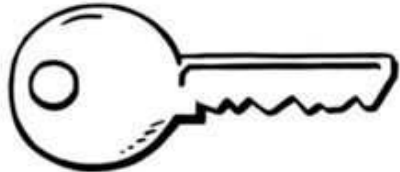
Republished with permission of Guilford Publications, from Scarborough (2001); permission conveyed through Copyright Clearance Center, Inc.

How children learn to read

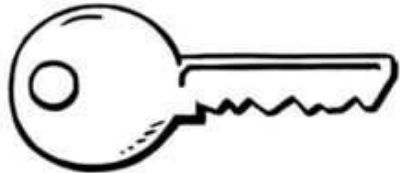
Evidence-based reading instruction is based on these major models and concepts in reading acquisition:

- Five essential elements of reading instruction
- The Simple View of Reading
- Cognitive developmental processes in beginning and skilled reading
- Orthographic mapping
- Self-teaching

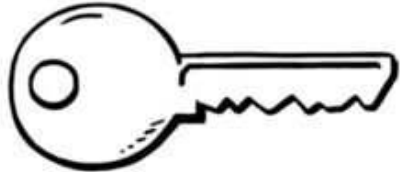
Evidence-based teaching: the five keys to reading



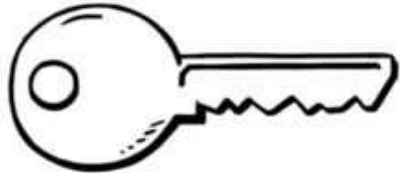
Phonemic awareness



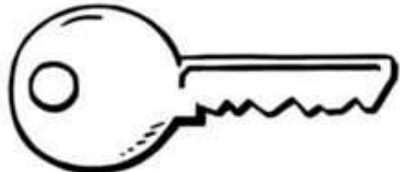
Phonics



Fluency



Vocabulary



Comprehension

The Simple View of Reading

There is a large amount of consistent evidence that reading comprehension is almost entirely dependent on word recognition and language comprehension.

$$\text{Reading Comprehension} = \text{Word Identification} \times \text{Language Comprehension}$$

The Simple View of Reading

Reading has two essential cognitive requirements
— word recognition processes and
comprehension.

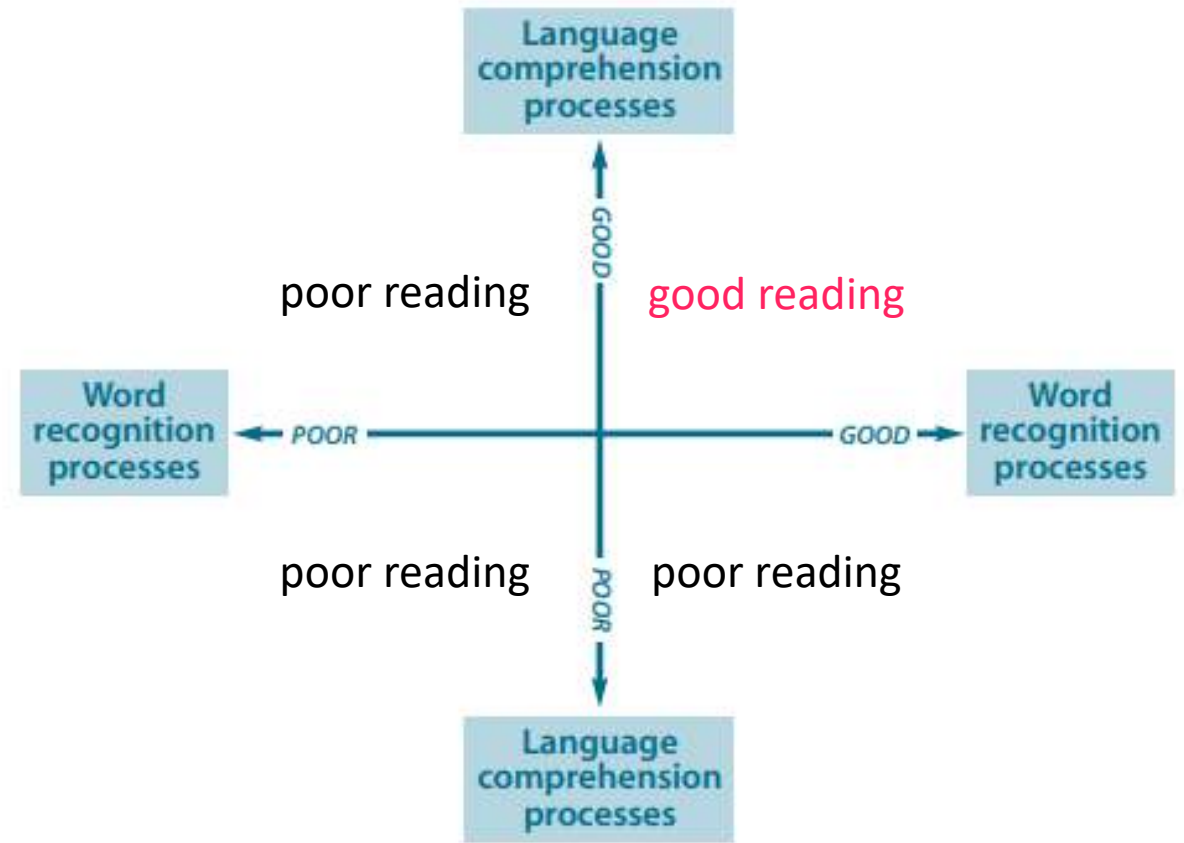
(Gough & Tunmer, 1986)

Reading comprehension will be impaired for
anyone who has difficulty recognising the words of
the text or understanding the language being read,
or both.

(Hoover & Tunmer, 2018)

The relative contributions of language
comprehension and word recognition to reading
comprehension changes across grades, with word
recognition having a stronger relation to reading
comprehension for younger than for older children.

(Lonigan et al., 2018)



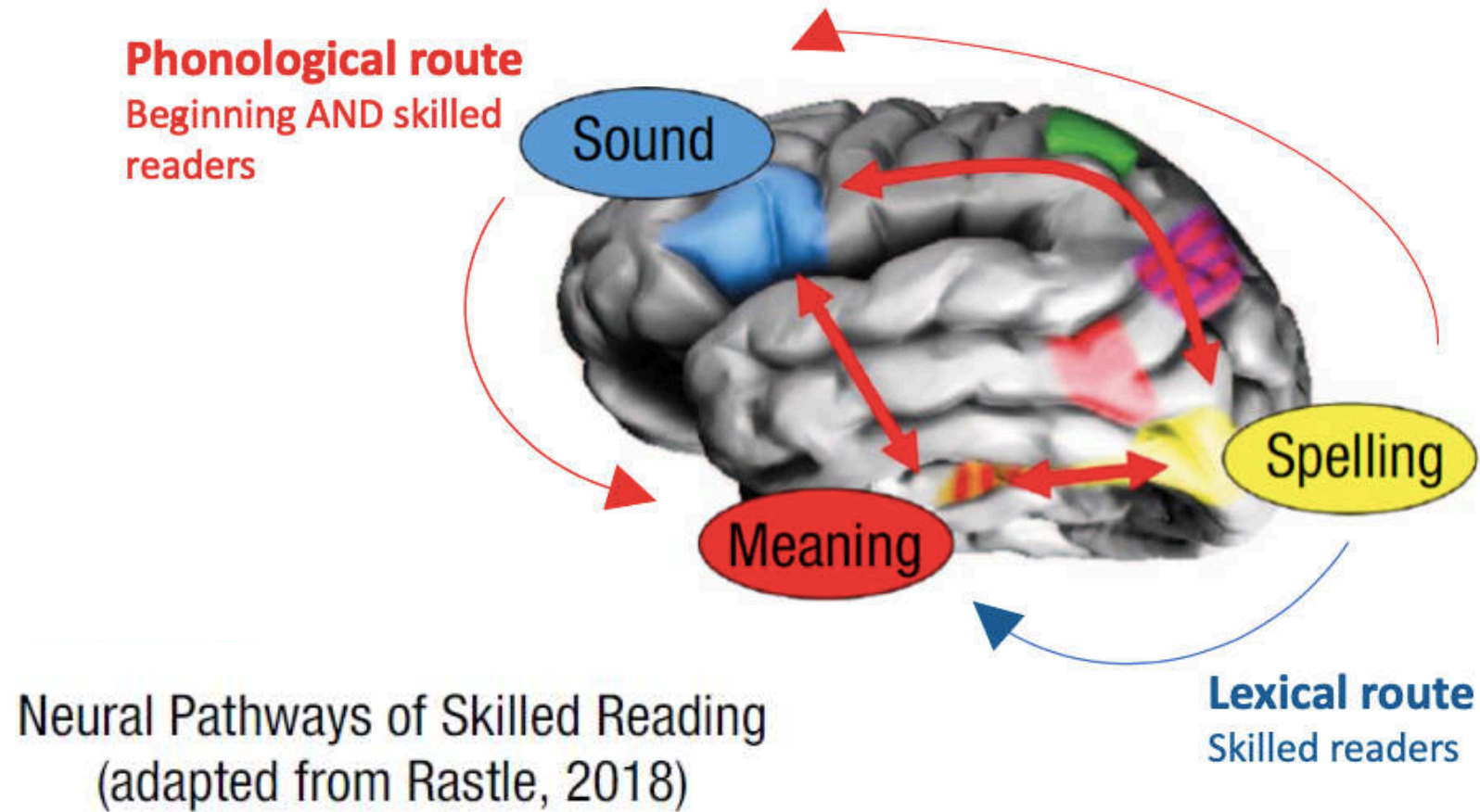
Phonics has a crucial role in learning to read



“There is clear consensus and abundant evidence that in alphabetic languages, phonological decoding is at the core of learning to read words”

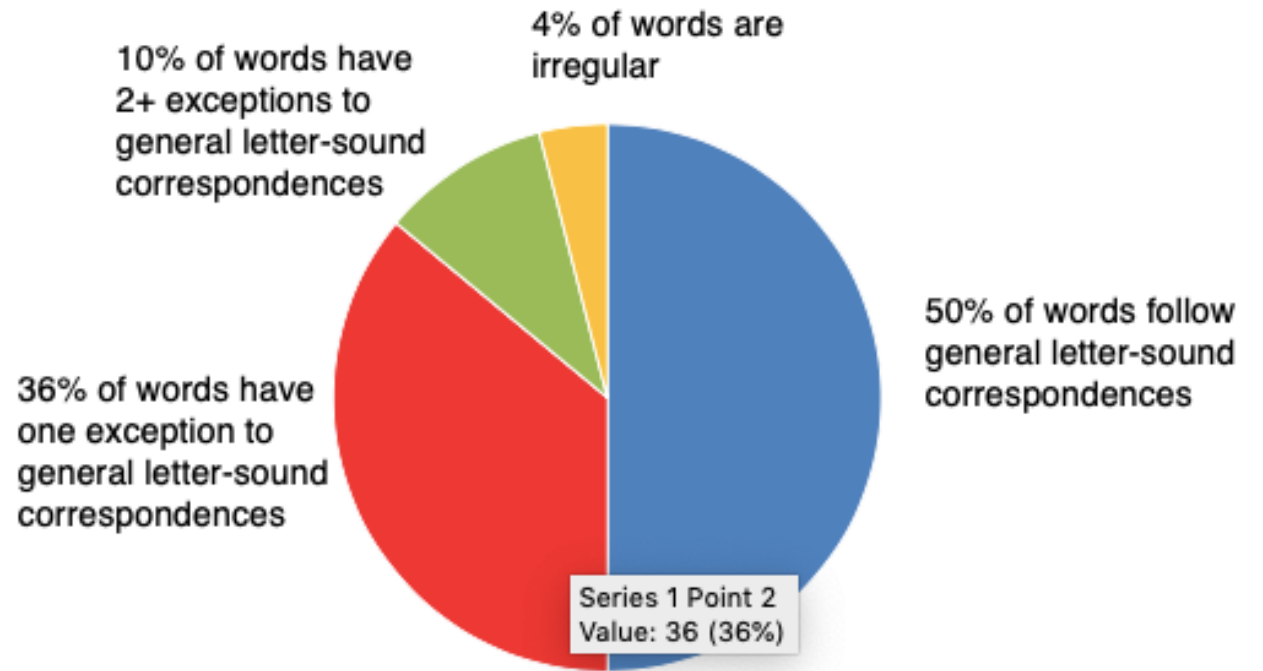
Professor Kate Nation, *ReadOxford*

Beginning readers are different to skilled readers



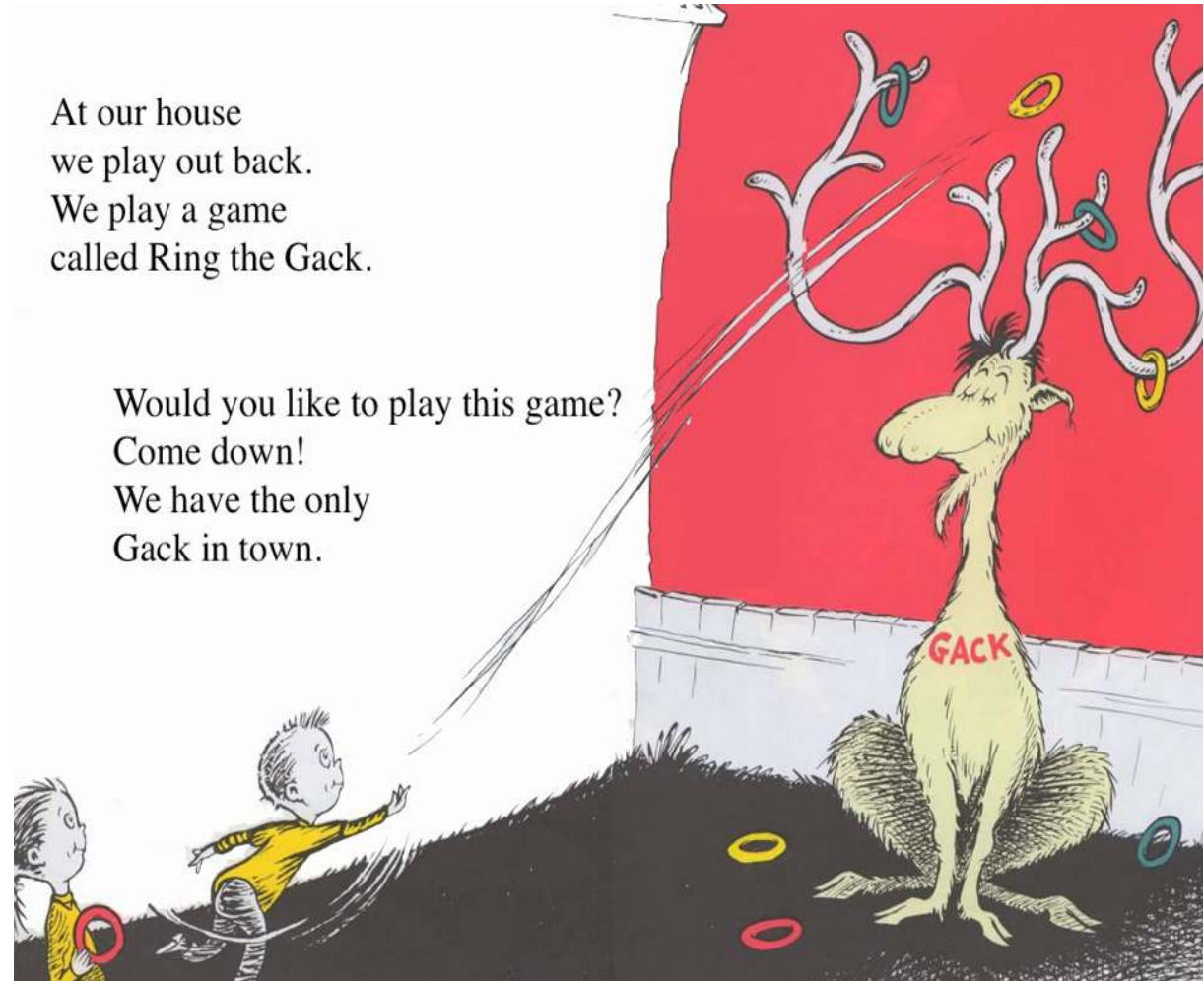
Getting from the phonological to the lexical route: Orthographic mapping

- When we have seen and read a word many times, it is stored in long term memory as a unique letter string and can be read almost instantly. This process is referred to as *orthographic mapping*.
- It is not the same as learning words as 'sight words', where words are memorised as logographs (word shapes) without reference to the grapheme-phoneme properties of the word.



The self-teaching hypothesis

- Once learners have established their knowledge of grapheme-phoneme correspondences and segmenting and blending, they begin to apply this knowledge to new and novel words.
- Proficient decoders can do this because the reader is able to pay attention to the order and identity of letters and **how they map onto the spoken form** of the word.
- Each time a reader is exposed to a new word when reading they are able to use their knowledge of phonics to work out how to say the word and add it to their orthographic memory.























“What is often lacking in initial reading instruction, in particular, is effective, specific instruction in what is known as synthetic phonics; how to relate letters to sounds and to blend letter sounds into words.”

“Phonics instruction provides a self-teaching mechanism by which children can teach themselves an increasing number of new words, initially by sounding them out. With sufficient repetition, and this varies for each child, these words are learned as sight words; they do not subsequently have to be sounded out each time they are encountered in text.”

- Emeritus Professor Kevin Wheldall

What is synthetic phonics?

- *Synthetic* means building words from the smallest sub-word units – graphemes and phonemes.
- Grapheme-phoneme correspondences are taught in a carefully developed sequence from simple to complex
- Blending and segmenting is introduced as soon as a few GPCs are learned
- The simple code can be taught in a few months and the extended code in two to three years

Short vowels	 /a/ a - ant	 /e/ e - elephant	 /i/ i - insect y - gym	 /o/ o - otter	 /u/ u - umbrella	
	Long vowels	 /ā/ ai - rain ay - play ā_e - cake	 /ē/ ee - tree ea - leaf ē_e - eve _y - happy _ey - key	 /ī/ _y - cry igh - light ī_e - bike	 /ō/ oa - boat ow - snow ō_e - bone	 /ū/ ue - rescue ew - new ū_e - tube
Other vowels		 oo moon oo - moon ue - blue ew - flew u_e - flute	 oo book oo - book	 /ow/ ow - cow ou - cloud	 /oy/ oi - coin oy - boy	 schwa alarm extra garden basin button circus dollar doctor teacher
	Vowel + r					
 /ar/ ar - star	 /or/ or - fork ore - snore au - autumn aw - claw	 /ir/ ir - stir er - fern ur - surf	 /eer/ ear - near eer - cheer	 /air/ air - hair _are - beware		

Synthetic phonics is strongly aligned to the scientific evidence of how children learn to read

- Synthetic phonics builds the necessary **neurological connections** between the visual (grapheme) and phonological (phoneme) characteristics of words.
- It thereby develops the **phonological route to reading** – the initial and essential cognitive process for beginning readers
- It establishes these connections quickly and firmly, moving this information to long term memory and minimising **cognitive load**
- The pace can be adjusted to the **learning needs** of individual children
- Learning to decode ‘through the word’ facilitates **orthographic mapping**, leading to skilled and proficient reading.
- Blending and segmenting of GPCs is introduced early to allow cumulative introduction of new GPCs, allowing the decoding of new words and facilitating **self-teaching**.
- Successful self-teaching using phonic knowledge accelerates the acquisition of ‘sight words’ and development of the **lexical route of the DRC model** – leading to fluent and proficient reading.

What is evidence-based reading intervention?

Effective intervention: a non-categorical approach

- Based on the same theoretical and evidence base as effective instruction for all children.
- The variation is in focus, intensity and duration.
- Instruction is not be tailored to the perceived needs of *categories* of students but rather to the specific instructional needs of the individual child.
- Driven by the solution rather than cause.
- ‘Response to Intervention’ has become the alternative to the ‘wait to fail’, or reading discrepancy method, of identifying children struggling to learn to read.
- Frequent use of valid and fit-for-purpose assessment

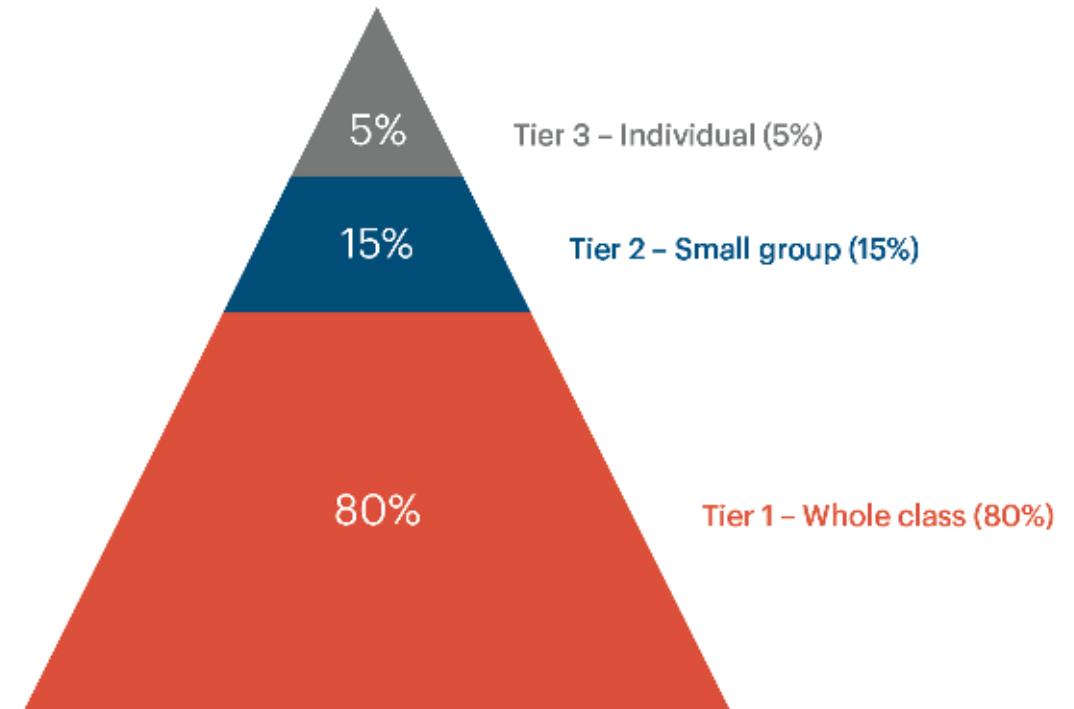
Response to Intervention model

All children need exemplary Tier 1 instruction and this is likely to be sufficient for about 80% of the age cohort to learn to read well.

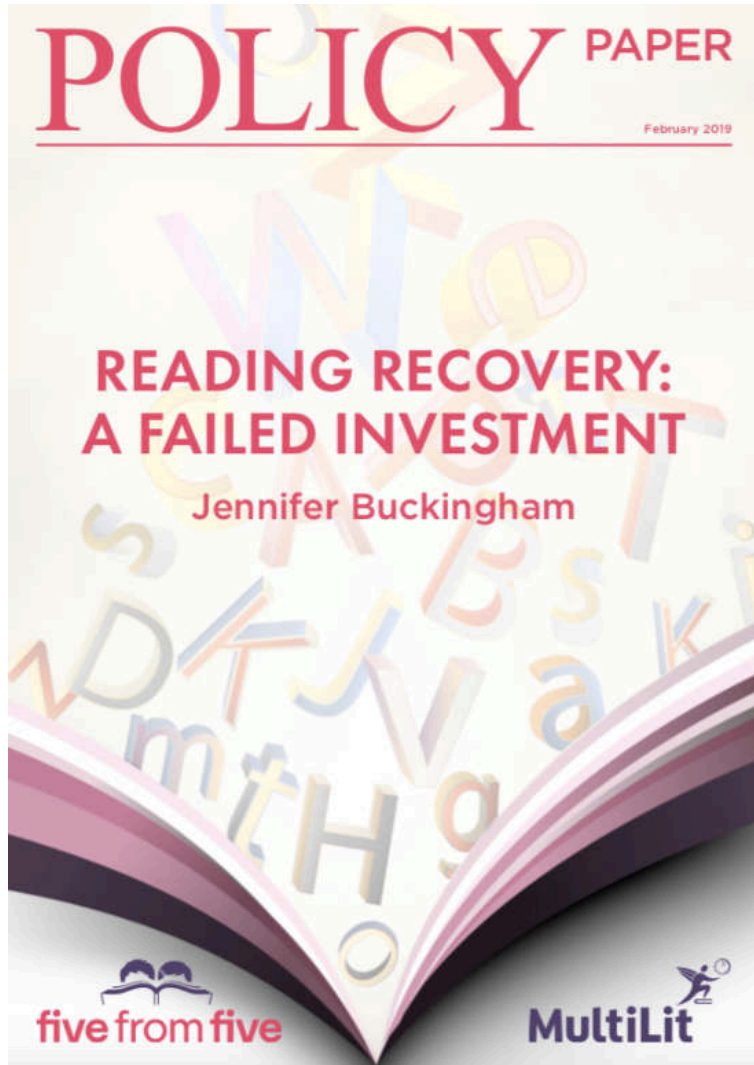
Around 20% of children are likely to fall behind and will need Tier 2 small group instruction to allow them to keep up with whole class lessons.

About 5% of the age cohort will need even more support than this, in the form of intensive individualised instruction – Tier 3.

The appropriate tier of instruction is determined by continual monitoring of student performance and progress



Reading Recovery does not have a strong evidence base



Every Child A Reader Ten Year Follow Up (UK) **UNPUBLISHED** (n = 271)

- Compared three groups of students
- Ten years later... RR > CC RRC > CC RR = RRC
- This suggests that there was something about the RR schools that was associated with higher achievement in Year 6 rather than participation in RR itself.

CESE evaluation (NSW) (n = 20,000+)

- Compared children who had done Reading Recovery in Year 1 with a matched group of children who had not.
- Children who had done Reading Recovery had on average significantly lower scores on the NAPLAN reading test in Year 3.

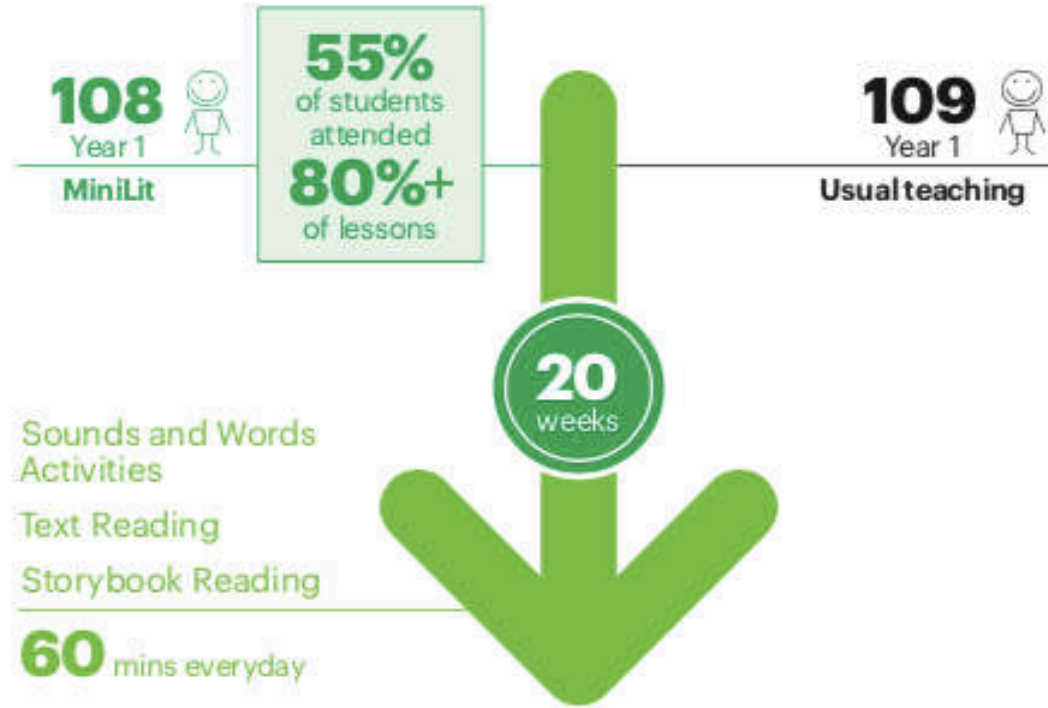
i3 Scale Up (USA) (n = 630)

- Compared children who had done RR in Year 1 with a matched group of children who had not.
- There was no significant difference in Year 3 reading scores on the Iowa Basic Skills test between the groups

MiniLit Learning Impact Fund Evaluation

- In 2017, MultiLit collaborated with Evidence for Learning and the New South Wales Department of Education to undertake a trial of the MiniLit intervention program. MultiLit provided training, resources and limited coaching to schools implementing the program.
- The trial was evaluated by an independent team of researchers from the Royal Children's Hospital Melbourne, the Murdoch Children's Research Institute and the University of Melbourne.
- Reading outcomes for children who attended MiniLit were compared to children who had not attended MiniLit at two time points: at the end of the intervention period (six months after the trial started) and six months after the intervention ended (12 months after the trial started).
- The report of the evaluation was released in August 2019.





MiniLit students had significantly higher

Letter-Sound Knowledge*	Effect size	1.44
Phonemic Awareness*	Effect size	0.65
Regular Word Reading**	Effect size	0.59
Non-word Reading**	Effect size	0.43

Progress in policy

Open letter to the federal minister for education

In 2004, a group of eminent reading researchers, linguists, educational psychologists and cognitive scientists wrote an open letter to then federal education minister, Brendan Nelson.

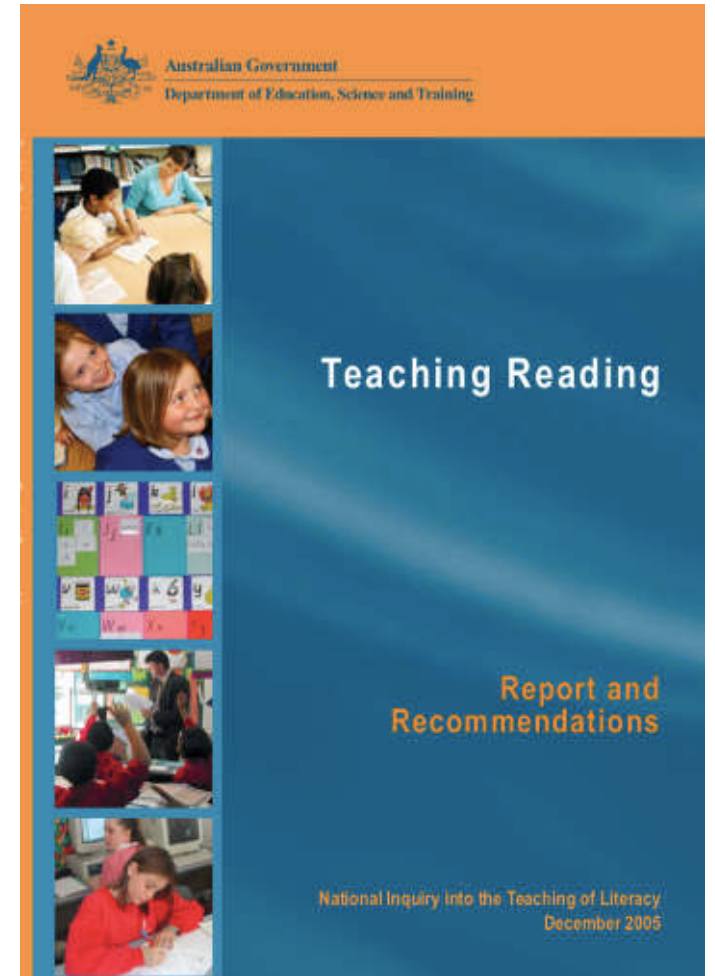
“We would like particularly to draw to your attention to the continuing discrepancy between the model of reading development that forms the basis for most of our current school curricula and teaching methods, and the model of reading development that is emerging as a result of the research into reading that has been undertaken over the past twenty to thirty years.”

This letter renewed the debate over reading instruction and led to a national inquiry into the teaching of literacy.

The Rowe Report (2005)

“The committee recommends that teachers provide systematic, direct and explicit phonics instruction so that children master the essential alphabetic code-breaking skills required for foundational reading proficiency.

Equally, that teachers provide an integrated approach to reading that supports the development of oral language, vocabulary, grammar, reading fluency, comprehension and the literacies of new technologies.”



“Nothing has actually happened since the inquiry because Higher education providers of teacher education and those who provide ongoing professional development of teachers, with a few exceptions, are still puddling around in postmodernist claptrap about how children learn to read.”

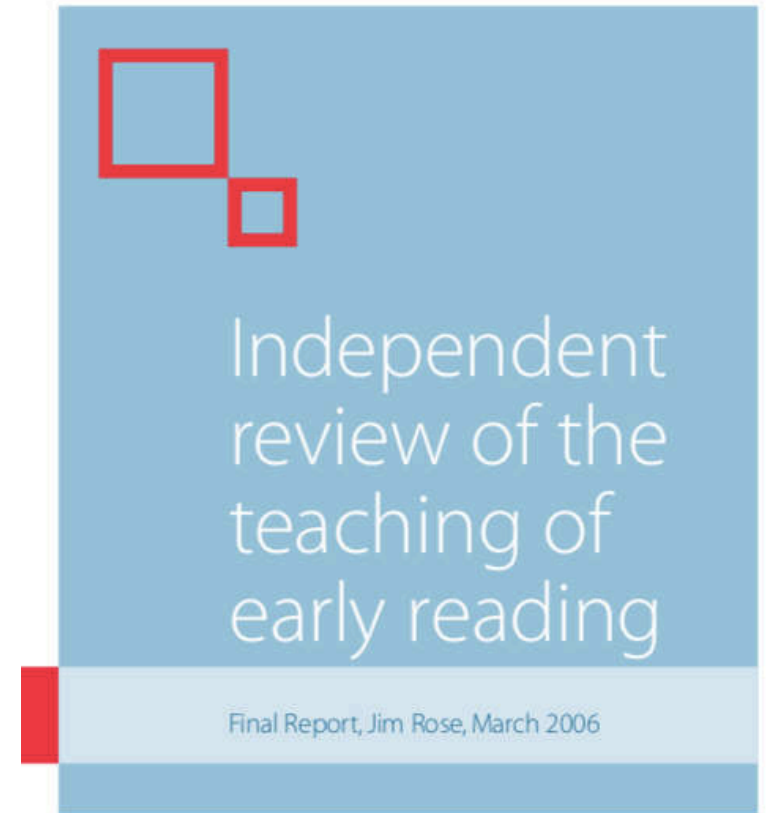
- Professor Ken Rowe in *The Age* (8 Sept 2008)



The Rose Report (2006)

“High quality, systematic phonic work as defined by the review should be taught discretely.”

“Phonic work should be set within a broad and rich language curriculum that takes full account of developing the four interdependent strands of language: speaking, listening, reading and writing and enlarging children’s stock of words.”



Australian Curriculum was introduced in 2012

English: Foundation to Year 2

Language, Literacy and Literature (Receptive and Productive modes)

Content descriptions and achievement standards relating to phonemic awareness, phonics, and word reading

Comparison of 2012 (original document) and 2015 (current version)

Foundation

2012							
Know that spoken sounds and words can be written down using letters of the alphabet and how to write some high frequency sight words and known words.	Know how to use onset and rime to spell words.	Recognise rhymes, syllables and sounds (phonemes) in spoken words.	Recognise the letters of the alphabet and know there are lower and upper case letters.	Produce some lower case and upper case letters using learned letter formations.			
2015 (current)							
Recognise and generate rhyming words, alliteration patterns, syllables and sounds (phonemes) in spoken words.	Recognise and name all upper and lower case letters (graphemes) and know the most common sound that each letter represents.	Understand how to use knowledge of letters and sounds, including onset and rime to spell words.	Know how to read and write some high-frequency words and other familiar words.	Understand that words are units of meaning and can be made of more than one meaningful part.	Segment sentences into individual words and orally blend and segment onset and rime in single syllable spoken words, and isolate, blend and manipulate phonemes in single syllable	Write consonant-vowel-consonant (CVC) words by representing some sounds with the appropriate letters, and blend sounds associated with letters when reading CVC words.	Read decodable and predictable texts, practising phrasing and fluency, and monitor meaning using concepts about print and emerging contextual, semantic, grammatical and phonic knowledge.

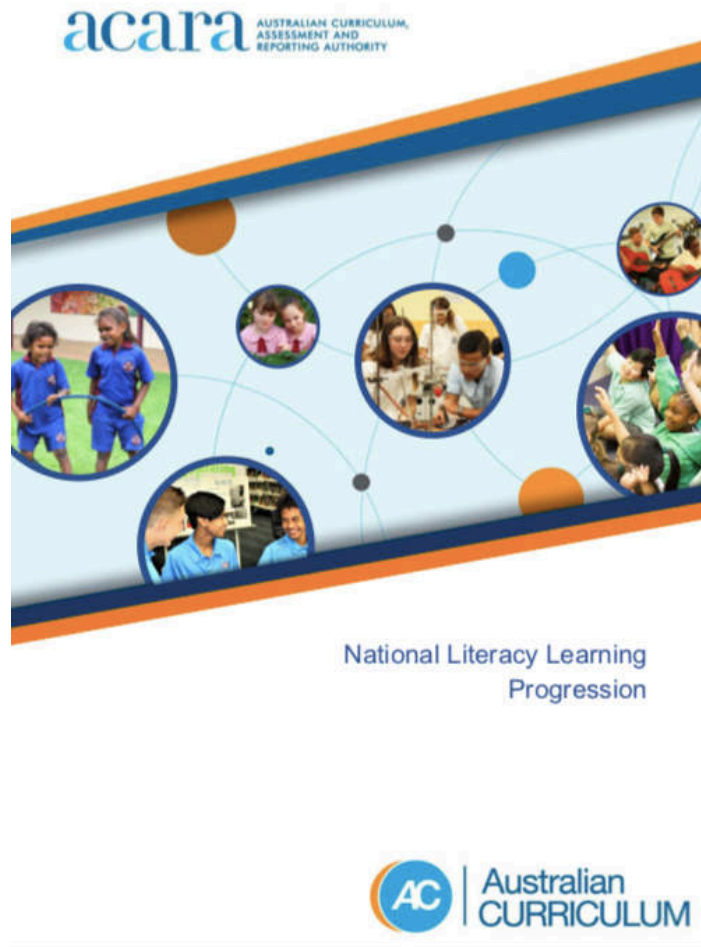
Year 1

2012							
Know that regular one syllable words are made up of letters and common letter clusters that correspond to the sounds heard, and how to use visual memory to write high frequency words.	Manipulate sounds in spoken words including phoneme deletion and substitution.	Recognise sound-letter matches including common vowel and consonant digraphs and consonant blends.	Understand the variability of sound-letter matches.	Recognise and know how to use morphemes in word families.	Combining knowledge of context, meaning, grammar and phonics to decode text.		
2015 (current)							
Manipulate phonemes in spoken words by addition, deletion and substitution of initial, medial and final phonemes to generate new words.	Use short vowels, common long vowels, consonant digraphs and consonant blends when writing, and blend these to read single syllable words.	Understand that a letter can represent more than one sound and that a syllable must contain a vowel sound.	Understand how to spell one and two syllable words with common letter patterns.	Recognise and know how to use simple grammatical morphemes to create word families.	Use visual memory to read and write high-frequency words.	Segment consonant blends or clusters into separate phonemes at the beginnings and ends of one syllable words.	Read decodable and predictable texts using developing phrasing, fluency, contextual, semantic, grammatical and phonic knowledge and emerging text processing strategies, for example prediction, monitoring meaning and re-reading

Year 2

2012						
Understand how to use digraphs, long vowels, blends and silent letters to spell words, and use morphemes and syllabification to break up simple words and use visual memory to write irregular words.	Recognise most sound-letter matches including silent letters, vowel/consonant digraphs and many less common sound-letter combinations					
2015 (current)						
Orally manipulate more complex sounds in spoken words through knowledge of blending and segmenting sounds, phoneme deletion and substitution in combination with use of letters in reading and writing.	Understand how to use knowledge of digraphs, long vowels, blends and silent letters to spell one and two syllable words including some compound words.	Build morphemic word families using knowledge of prefixes and suffixes.	Use knowledge of letter patterns and morphemes to read and write high-frequency words and words whose spelling is not predictable from their sounds.	Use most letter-sound matches including vowel digraphs, less common long vowel patterns, letter clusters and silent letters when reading and writing words of one or more syllable.	Understand that a sound can be represented by various letter combinations.	Read less predictable texts with phrasing and fluency by combining contextual, semantic, grammatical and phonic knowledge using text processing strategies, for example monitoring meaning, predicting, rereading and self-correcting.

Literacy Learning Progressions (2018)



The National Literacy Learning Progression helps teachers to develop fine-grain understandings of student literacy development in the Australian Curriculum: English, especially in the early years. The progression amplifies the literacy skills in the Australian Curriculum: English, particularly in the Language and Literacy strands.


The progression is particularly useful in guiding teachers to support students whose literacy development is above or below the age-equivalent curriculum expectations of the Australian Curriculum: English. The progression has not been designed as a checklist and does not replace the Australian Curriculum: English.

Example: Phonic knowledge and word recognition

PKW5	<p>Phonic knowledge</p> <ul style="list-style-type: none">• gives examples of how a phoneme can be represented by more than one letter or letter combination (c, ck)• says short and long vowel sounds for letters a, e, i, o, u• reads single-syllable words with common double letters (ss – fuss, ll – will, zz – buzz, f – puff) and applies this when reading decodable texts• reads single-syllable words with taught consonant digraphs (sh, ch and ck – sh-i-p, r-i-ch, l-o-ck) and applies this when reading decodable texts• reads single-syllable words with common long vowels CVCe and applies this when reading decodable texts• reads one- and two-syllable words with common suffixes, applies when reading decodable texts and uses appropriately when writing (-ing, -ed,) (jumped)• segments and represents CCVC and CVCC words containing consonant digraphs and consonant blends (sh-o-p, b-e-s-t) <p>Word recognition</p> <ul style="list-style-type: none">• reads an increasing number of taught high-frequency words in decodable texts and different contexts (own writing, shared reading)
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Australian Curriculum: definition of 'decode'



 Glossary

decode

2012 original definition:

A process of working out meaning of words in a text. In decoding, readers draw on contextual, vocabulary, grammatical and phonic knowledge. Readers who decode effectively combine these forms of knowledge fluently and automatically, and self-correct using meaning to recognise when they make an error.

2019 revised definition:

A process of efficient word recognition in which readers use knowledge of the relationship between letters and sounds to work out how to say and read written words.

Queensland Literacy Indicators P-2

- No guidance on scope and sequence of phonics content
- Large leaps between the indicators for each year
- Encourages three-cueing strategies for word reading, with phonic cues last

Queensland Literacy Indicators P-2: Word knowledge

www.qcaa.qld.edu.au/downloads/p_10/literacy_indicators_p-2.pdf

Prep

Recognise rhymes, syllables and phonemes (the smallest unit of sound in a word) in spoken words.

Interpret and use familiar and new vocabulary related to personal and school contexts to label and describe.

Independently read and understand, to develop fluency:

- predictable learning area texts, practising phrasing (chunking text into appropriate phrases)
- a small number of high-frequency sight words and personally significant words, including words and symbols from familiar texts

Year 1

Manipulate sounds, including phoneme deletion and substitution, in spoken words.

Interpret and use familiar vocabulary and new topic vocabulary drawn from learning experiences to categorise and explain.

Independently read and understand, to develop fluency:

- supportive learning area texts with increasing demonstrations of phrasing
- a range of high-frequency sight words with automaticity
- words of personal significance in school and other contexts

Year 2

Identify sounds, including vowel/consonant digraphs (two letters that represent a single sound) and less common sound–letter combinations, in spoken words.

Interpret and use vocabulary drawn from learning experiences to add detail, define and link ideas and experiment with selecting words to clarify meaning.

Independently read and understand, with phrasing and fluency:

- a range of high-frequency sight words with automaticity
- familiar learning area vocabulary
- common irregular words

Queensland Literacy Indicators P-2: Word knowledge

www.qcaa.qld.edu.au/downloads/p_10/literacy_indicators_p-2.pdf

Prep	Year 1	Year 2
<p>Decode words using:</p> <ul style="list-style-type: none">• semantic cues, including morphemes (smallest units of meaning), familiar words and phrases, connections to prior knowledge of oral and written language.• grammatical cues, including familiar word order and language patterns,• phonic cues, including segmented individual sounds, sound–letter relationships for initial and final sounds and consonant blends, onset and rime (the separate sounds in a syllable or in a one-syllable word) and familiar words within words.	<p>Decode words using:</p> <ul style="list-style-type: none">• semantic cues, including sentences and visual features, drawing on prior knowledge of oral and written language• grammatical cues, including word order, language patterns and punctuation,• phonic cues, including blended and segmented individual sounds in words,• sound–letter relationships for initial, medial (middle) and final sounds and words within words.	<p>Decode words using and combining cuing systems, including:</p> <ul style="list-style-type: none">• semantic cues such as prefixes and suffixes, base words, phrases, sentences and visual features• grammatical cues,• phonic cues such as syllables, vowel patterns, consonant digraphs and three-letter blends

Year 1 Literacy Check (June)

- The June literacy check is essentially a Running Record using a predictive text.
- It contains words that are phonetically complex and which have no relationship to the phonics indicators.
- Many children would read the text for this check correctly only if
 - a) they had learned many words as sight words
 - b) they correctly predicted the word using picture cues (there are no semantic or contextual cues in the text)
- The text chosen for assessment strongly indicates that children are not expected to be able to read the words using phonetic decoding as their first strategy

The Mummy Book by Todd Parr (Year 1 Literacy Check)

Some mummies drive cars.

Some mummies drive motorcycles.

Some mummies wear jeans.

Some mummies dress up.

Some mummies make snow angels with you.

Some mummies play in the rain with you.

Some mummies work at home.

Some mummies work in big buildings.



Year 1 Phonics Screening Check



Focus on Phonics:
Why Australia should adopt the
Year 1 Phonics Screening Check

Jennifer Buckingham

 
MultiLit five from five
Research Report | November 2016

- 2016** Focus on Phonics
- 2017** Quality Schools Quality Outcomes
- 2017** Expert Advisory Group for Fed Govt
- 2017** South Australian trial 2017
- 2018** South Australian state-wide roll out
- 2018** Queensland Catholic Education trial
- 2019** South Australia Catholic and independent schools opt in
- 2020** NSW trial

Obstacles to improvement

Initial Teacher Education

116 core literacy units in 66 undergraduate degrees in 38 universities.

Course outlines:

- Only 4% of the literacy units had a specific focus on early reading instruction or early literacy; that is, how to teach beginning readers in the first few years of school.
- In 70% of literacy units, none of the five essential elements of effective evidence-based reading instruction were mentioned in the unit outlines. All five essential elements were referred to in only 6% of literacy unit outlines.
- None of the unit outlines contained references to the Simple View of Reading. The specific model or theory mentioned most frequently in the unit outlines was the Four Resources / Four Roles of a Reader model, with eight mentions. The sociocultural model or view of reading was referred to nine times.



Initial Teacher Education

116 core literacy units in 66 undergraduate degrees in 38 universities.

Lecturer/course coordinator qualifications and expertise

- 15% of the lecturers and unit coordinators that could be identified had specific expertise in early reading instruction or literacy, most with a particular interest in early literacy development among Indigenous and other children from non-English speaking backgrounds.
- 55% had research interests and expertise in other aspects of literacy, most often digital and multi-modal literacies.
- 30% of the literacy lecturers or unit coordinators had research interests and expertise in areas other than literacy, such as maths or music.



Initial Teacher Education

116 core literacy units in 66 undergraduate degrees in 38 universities.

Six most commonly prescribed text books:

- None contained sufficiently accurate and detailed content that would allow graduate teachers to use effective, evidence-based instruction, and many contained information that was inadequate and/or misleading.
- Most of the textbooks with phonics content explicitly endorse the 'three-cueing system', and all textbooks promote it implicitly.
- Two of the six books referred to the Simple View of Reading but devoted less than a page to it. All endorsed the Four Resources Model.
- Only one book referred to dyslexia at all, and the content is brief.



Seely Flint, A., Kitson, L., Lowe, K., & Shaw, K. (2014).

Literacy in Australia: Pedagogies for engagement. Milton, Australia: Wiley. (p. 232)

“Use onset and reading ahead to gather more information. It is not uncommon for children to say ‘I read ahead and thought it was pony but when I took another look, I noticed it started with “s” – it must be stallion’.”

“Sound out a word by elongating its sounds. This is a familiar but often ineffective strategy, known as ‘sounding out’. This strategy encourages readers to stretch out the sounds from left to right, noticing all the sounds in the word. As a strategy it is not all that predictable because of the large variation in the way letters and words are sounded. Using the first letter and gaining meaning from the sentence is a much more predictable strategy.”

Conclusions

- The research and teaching community knows a lot about how children learn to read and how best to teach them.
- Schools are often working in advance of, and leading, governments and universities.
- Progress toward implementation is slow but real – both in schools and in policy.
- Progress is patchy in Australia: Federation is a blessing and a curse.
- Subject professional associations and teacher unions have been slow to accept the scientific research evidence on reading instruction.
- Independent universities and academic freedom are important but present a barrier to improvement.





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