Reading Success in the Primary Years

Marleen Westerveld & Rebecca Armstrong

Professional Development Seminar Series

27 Oct 2020

Griffith UNIVERSITY

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

An overview

- Introduction and quick poll
- The importance of Reading Success and Aims of the project
- Theoretical underpinnings
- Our 5-Step Assessment to Intervention approach
- What did we find?
- Case studies
- Summary and Conclusions
- Questions?

Who are you?

The importance of Reading Success

- Literacy is a basic human right *(United Nations Educational, Scientific and Cultural Organisation, 2005)*

- Level of reading achievement -> later educational success & psychosocial wellbeing *(Snow, 2016)*

Rationale for the Reading Success Project

A critical need to lift student outcomes

- The teaching of reading in our classrooms
- Pre-service teacher education
- Professional Development

Reading Wars
Science of Reading

Successful Readers

Our overall aims

To promote awareness of the importance of identifying reading profiles to direct targeted intervention / instruction.

Not a one size fits all approach

For schools to choose assessments that will inform intervention.

Not by adding more assessments

To encourage a speech pathology-education collaborative practice model.

Combining our areas of expertise

Aims of the Reading Success project

Introduce teachers to the Simple View of Reading as a framework to profile students' strengths and weaknesses.

Introduce a stepped approach, based on this theoretical framework, to facilitate implementation.

The Simple View of Reading

Reading Comprehension
=
Word Recognition x Language Comprehension

For Reading Comprehension to occur WR or LC ≠ zero

- Unique contributions of WR and LC to RC

- Changing contributions of these two components (WR & LC to RC) over time

Gough & Tunmer (1986)

Language Comprehension

"Language comprehension is the ability to extract and construct literal and inferred meaning from linguistic discourse represented in speech"

At word, sentence, and discourse (text) level

Tunmer & Hoover (2019)

"Reading comprehension and language comprehension are defined in a parallel fashion in the SVR model because both engage the same cognitive processes save the different points of access, one through print and the other through speech"
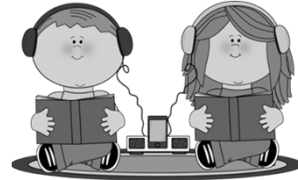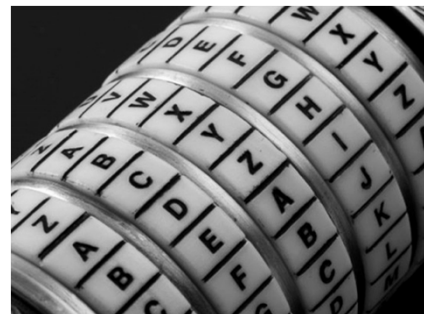
Word recognition

"word recognition is the ability to derive accurately and quickly a representation from printed input that allows access to the appropriate word meaning contained in the internal mental lexicon"
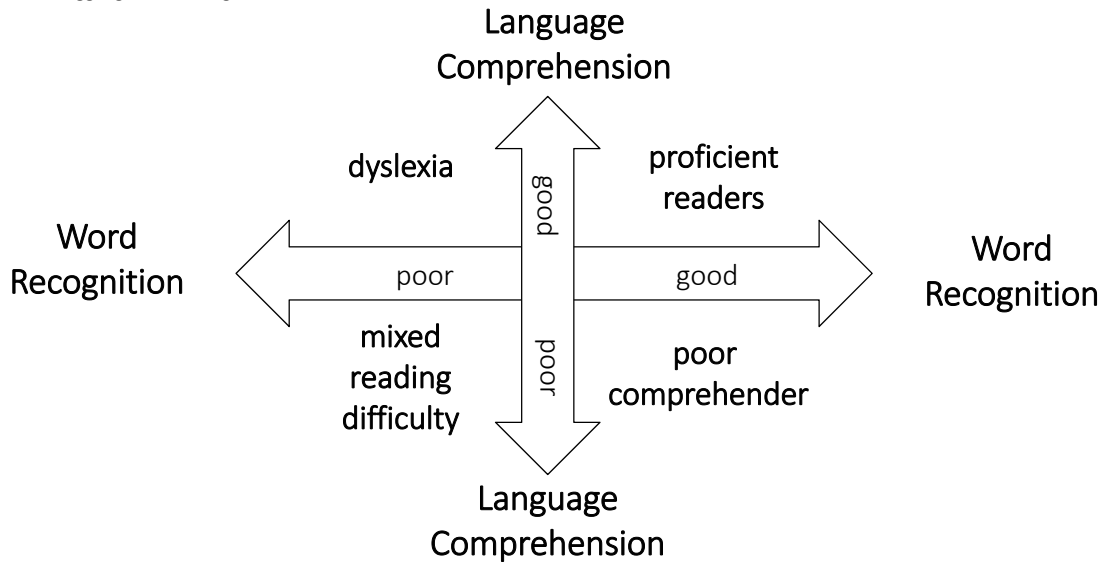
Word reading accuracy

Word reading fluency (once children
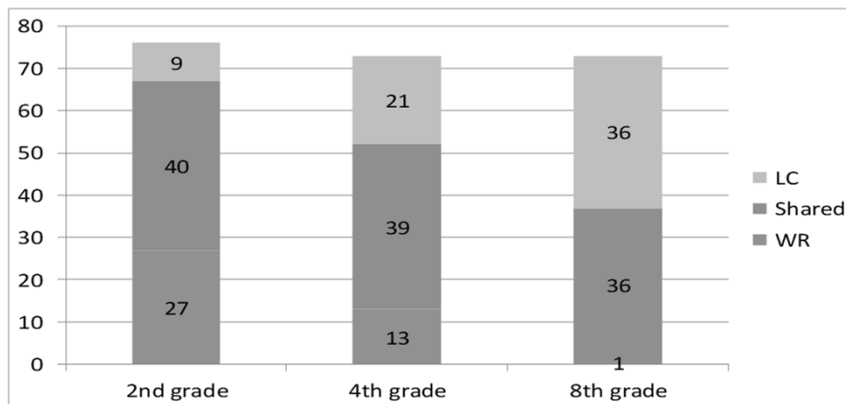
become more accurate in decoding)

Identifying student needs
Struggling reader categories

Language
Comprehension

dyslexia | good | proficient
readers

Word
Recognition ← poor | good → Word
Recognition

mixed
reading
difficulty | poor | poor
comprehender

Language
Comprehension

# Unique and shared contributions to reading comprehension across grades

From learning to read to learning through reading

Catts, Hogan, and Adlof (2005)

Cognitive Foundations Framework

Tunmer, W. E., & Hoover, W. A. (2019). The cognitive foundations of learning to read: a framework for preventing and remediating reading difficulties. *Australian Journal of Learning Difficulties, 24*(1), 75-93.
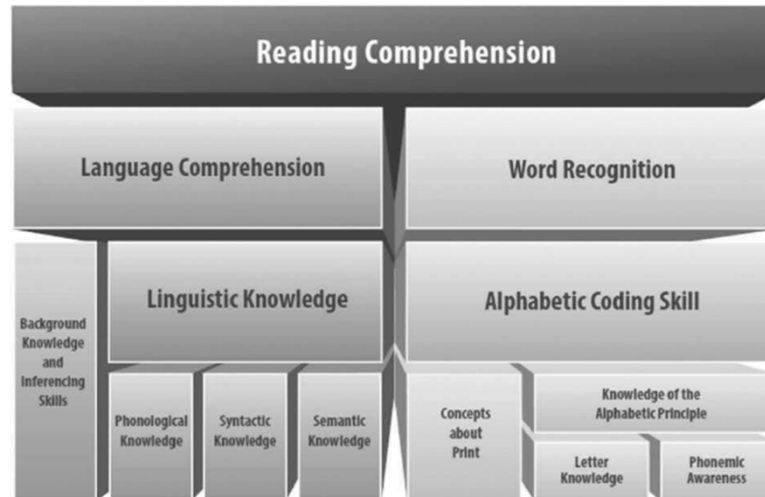
The Cognitive Foundations Framework

- It is not a flowchart – nor a house - one can develop knowledge and skills at several levels at the same time.
- But – provides direction for assessment - linked to evidence-based instructional strategies for addressing individual learning needs.
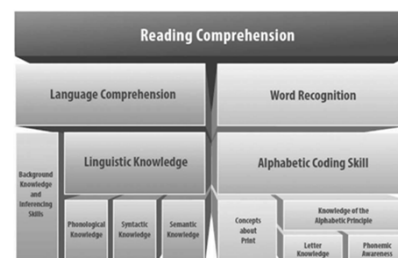
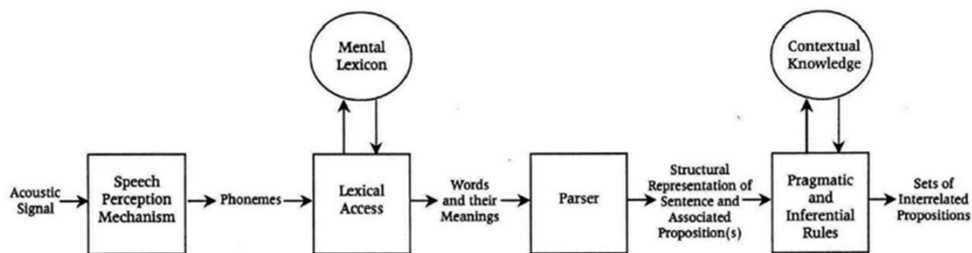# Underpinning Language Comprehension

- Linguistic Knowledge:
  - Phonological knowledge
  - Semantic knowledge
  - Syntactic knowledge
- Background Knowledge and Inferencing skills

Source: Tunmer & Hoover, 2019

Underpinning Word Recognition

- Requires the ability to map letters / letter combinations onto phonological forms
- Beginning readers must acquire alphabetic coding skills
- From analytic to automatic word recognition
- Self-teaching hypothesis
- Knowledge of the alphabetic principle relies on letter knowledge and phonemic awareness

But we cannot underestimate the importance of ….

- Students' prior knowledge and skills associated with diverse range of literacies
- Their personal motivation and self-perception
- Self-confidence levels
- Home and community environments
- Teaching environment:
  - Resources
  - Teacher knowledge
  - Quality

Back to the Reading Success Project

Marleen F. Westerveld
Rebecca M. Armstrong
Georgina M. Barton

Reading Success in the Primary Years

An Evidence-Based Interdisciplinary Approach to Guide Assessment and Intervention

Springer Open
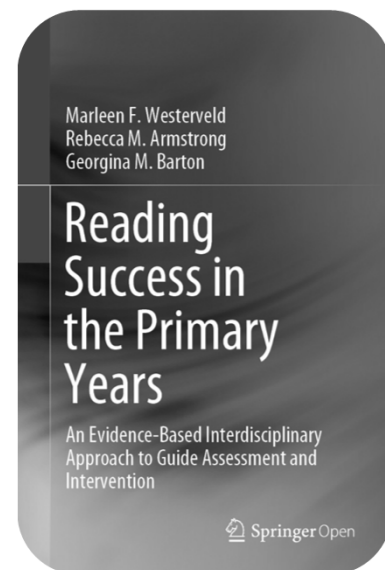
5-Step Assessment to Intervention Process

Step 1:
Re/assessment of reading skills using a standardised reading assessment that yields scores in RC, RA, and RR

Step 5:
Provision of targeted intervention

Step 2:
Further assessment of students who scored below expectations on RC: i) check RA and ii) check LC

Step 4:
Create speech-to-print profiles of strengths and weaknesses for students identified in step 1 as scoring below expectations on RC

Step 3:
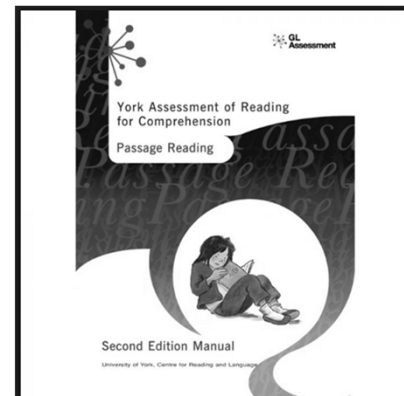Further assessment of students who scored below expectations on RA#

RC = Reading Comprehension;
RA = Reading Accuracy;
RR = Reading Rate;
LC = Language Comprehension

Step 1: Assessing reading skills

York Assessment of Reading for Comprehension (YARC):
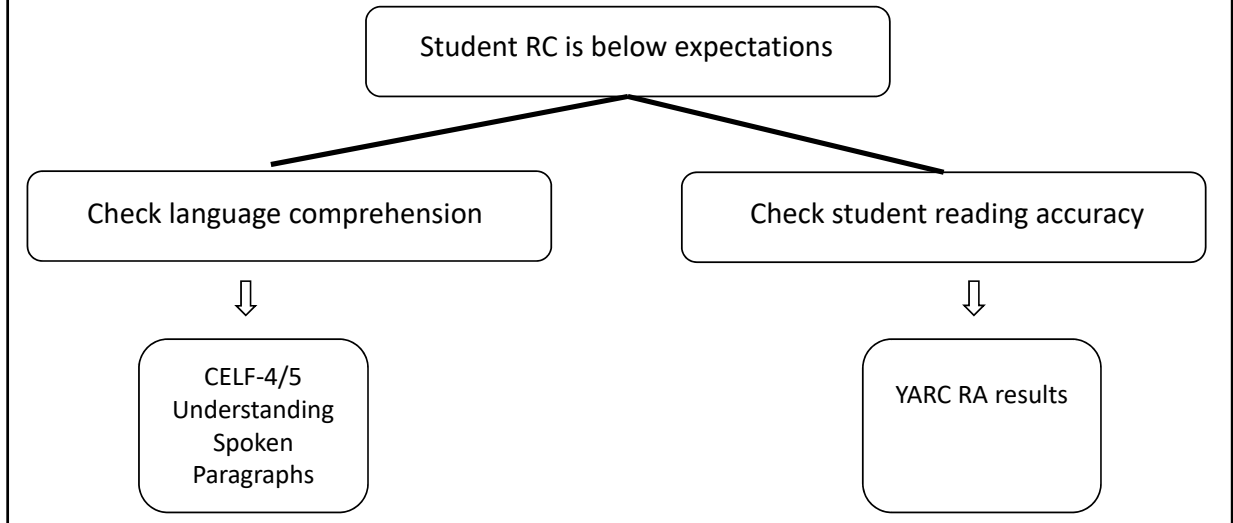
- **Reading comprehension score** – *the ability to answer questions related to a passage*
- **Reading accuracy score** – *the ability to accurately read passages*
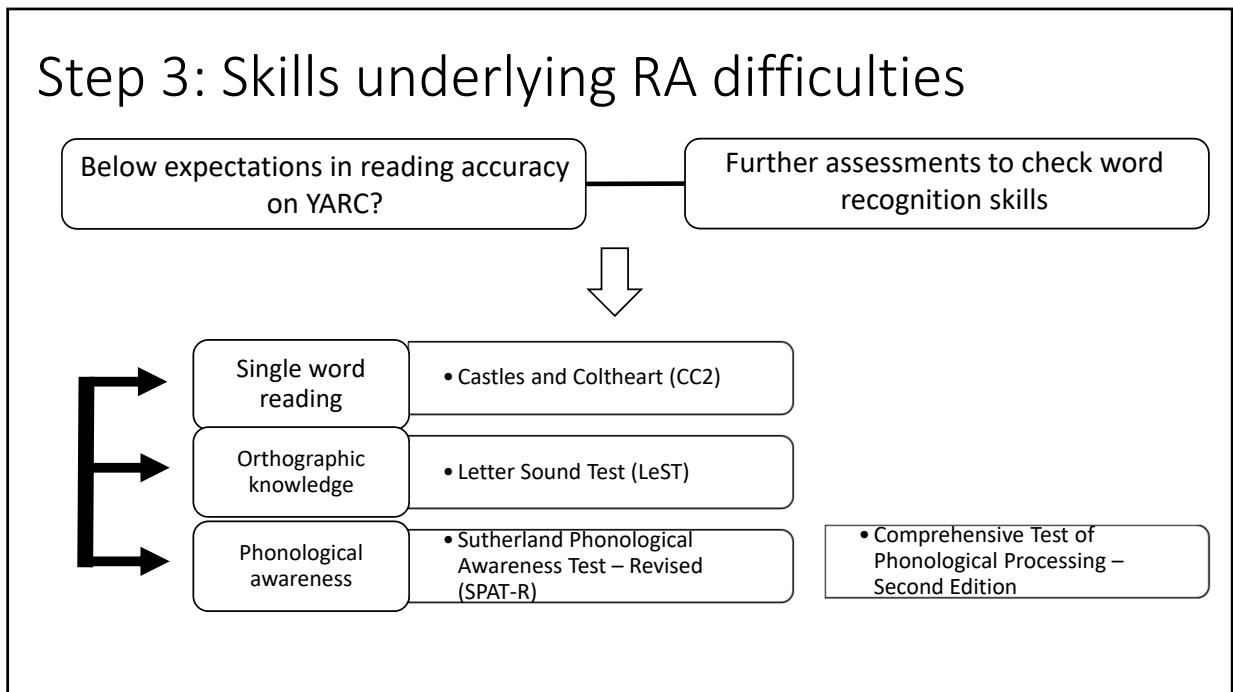- **Reading rate score** – *the ability to read fluently*

Why the YARC?

York Assessment of Reading for Comprehension

Passage Reading

Second Edition Manual
University of York, Centre for Reading and Language

Step 2: Further assessment to categorise reading profiles according to SVR

Student RC is below expectations

Check language comprehension

Check student reading accuracy

⇩

⇩

CELF-4/5 Understanding Spoken Paragraphs

YARC RA results

Step 3: Skills underlying RA difficulties

Below expectations in reading accuracy on YARC?

Further assessments to check word recognition skills

⇩

Single word reading
- Castles and Coltheart (CC2)

Orthographic knowledge
- Letter Sound Test (LeST)

Phonological awareness
- Sutherland Phonological Awareness Test – Revised (SPAT-R)

- Comprehensive Test of Phonological Processing – Second Edition

Step 4: Creating speech to print profiles

Source: Adapted from Gillon, 2018

	Written Language		
	Rule/concept knowledge	**Word – level**	**Text-level**
	Print concepts	Word recognition	Reading accuracy
		Regular word reading	
		Non-word reading	Reading comprehension
	Grapheme-Phoneme Correspondences		
	Single letter	*Irregular word reading*	
	Digraph		Reading fluency
	Trigraph		
	Diphthongs	Spelling (regular vs irregular)	
		Non word spelling	Writing

YARC ←

Step 5: Intervention initiatives

- Small-scale projects targeting children's reading profiles (as identified on the speech to print profile)
- Our focus was showing how children's performance guided the intervention they received
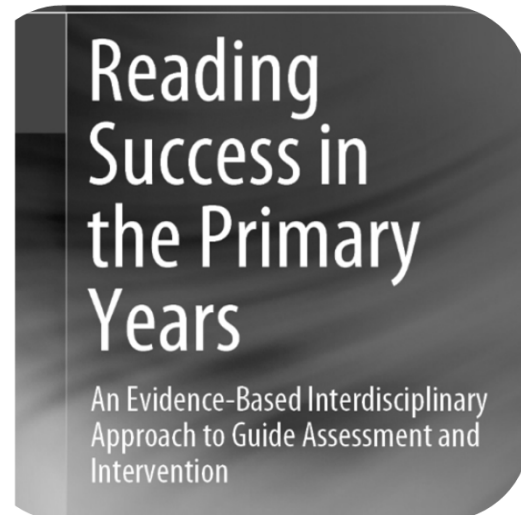
Comprehension

Phonological Processing

Orthographic Knowledge

What did we find?

Focus on Year 4

Reading Success in the Primary Years

An Evidence-Based Interdisciplinary Approach to Guide Assessment and Intervention

---

Results – Year 4 ($n = 77$)

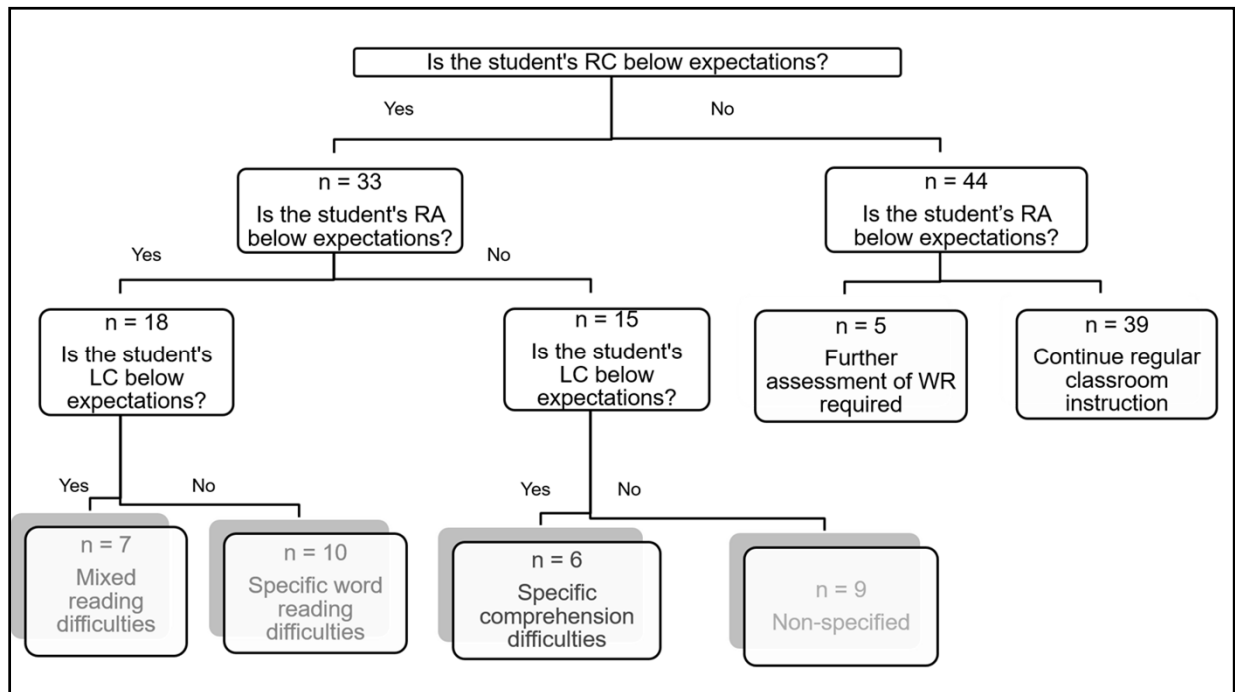|	
Step 1: Assess Reading Comprehension	33/77 (43%) below average RC
Step 2: Assess Text Level Reading Accuracy & Language Comprehension	18/33 (54%) below average RA
	13/32 (41%) below average LC
Step 3: Further assessment Reading Accuracy	17/18 (94%) below average WR

Is the student's RC below expectations?

Yes — No

n = 33
Is the student's RA below expectations?

n = 44
Is the student's RA below expectations?

Yes — No

n = 18
Is the student's LC below expectations?

n = 15
Is the student's LC below expectations?

n = 5
Further assessment of WR required

n = 39
Continue regular classroom instruction

Yes — No

n = 7
Mixed reading difficulties

n = 10
Specific word reading difficulties

Yes — No

n = 6
Specific comprehension difficulties

n = 9
Non-specified

Case studies – year 4

Will and Hannah

Teacher had identified reading difficulties in both students

Case example: Hannah

- Age 9;8
- Year 4
- No EAD/L or ATSI
- YARC:
  - Reading Accuracy: SS 73
  - Reading Rate: SS < 70
  - Reading Comprehension: SS < 70

Age equivalence: ~ 6 years

- No formal verification of language impairment
- NAPLAN (YR3) – Reading Band 3

Speech to print profile

Spoken Language			Written Language		
Knowledge	**Phonological Processing**		**Rules and concepts**	**Word-Level**	**Text-level**
Spoken language skills	Phonological awareness	Storage and retrieval of phonological information	Print Concepts	Word recognition	Reading Accuracy
			Ortho-graphic knowledge		Reading Comprehension
					Reading Rate
				Spelling	Writing

Speech to print profile

Spoken Language			Written Language		
Knowledge	**Phonological Processing**		**Rules and concepts**	**Word-Level**	**Text-level**
Spoken language skills	Phonological awareness	Storage and retrieval of phonological information	Print Concepts	Word recognition	Reading Accuracy
			Ortho-graphic knowledge		Reading Comprehension
					Reading Rate
		Chapter 6: Hannah Mixed Reading Difficulties Profile			
			Spelling	Writing	

Hannah's Speech to Print Profile

Spoken Language			Written Language		
	Phonological Processing				
Knowledge	**Awareness**	**Storage and Retrieval**	**Rule/concept knowledge**	**Word – level**	**Text-level**
Vocabulary Expressive ScS = 4 Word classes ScS = 5	1. Syllable level	*Non word repetition SS 4 CTOPP*	*Print concepts*	**Word recognition**	*Reading accuracy SS 73*
Syntax Expressive ScS = 3 Receptive ScS = 5	2. Onset-rime level	*Multisyllabic word repetition*	**Grapheme-Phoneme Correspondences: Z = -1.9**	*Regular word reading Z = -2.31*	*Reading comprehension SS < 70*
Morphology 25/40	3. Phoneme level ScS 14 (QUIL) CTOPP WNL	*Rapid Naming Slower than expected - CTOPP*		*Irregular word reading Z = -1.37*	*Reading rate SS < 70*
Phonology:				*Non-word reading Z = -2.42*	*Writing*
Text (structure) Listening to Spoken Paragraphs ScS = 5			*Single letter*	**Spelling:**	
Narrative – TNL SS 70			*Digraph*	*Regular*	
Expository			*Trigraph*	*Irregular*	
Persuasion			*Diphthongs*	*Non word spelling*	

Case example: Will

- Age 9:7
- Year 4
- No EAD/L or ATSI
- YARC:
- Reading Accuracy: SS 71
- Reading Rate: SS < 70
- Reading Comprehension: SS 79
- No formal verification of language impairment
- NAPLAN (YR3) – Reading Band 3

Age equivalence: ~ 6 years

Speech to print profile

Spoken Language			Written Language		
Knowledge	**Phonological Processing**		**Rules and concepts**	**Word-Level**	**Text-level**
Spoken language skills	Phonological awareness	Storage and retrieval of phonological information	Print Concepts	Word recognition	Reading Accuracy
			Ortho-graphic knowledge		Reading Comprehension
					Reading Rate
	Will: Specific Word Reading Difficulties			Spelling	Writing

Will's Speech to Print Profile

Spoken Language			Written Language		
	Phonological Processing				
Knowledge	Awareness	Storage and Retrieval	Rule/concept knowledge	Word – level	Text-level
Vocabulary Word classes ScS =11	1. Syllable level	Non word repetition	Print concepts	**Word recognition**	Reading accuracy SS 71
Syntax Expressive ScS = 14 Receptive ScS = 11	2. Onset-rime level	Multisyllabic word repetition	**Grapheme-Phoneme Correspondences:**	Regular word reading Z = -2.39	Reading comprehension SS 79
Morphology 35/40	3. Phoneme level ScS=11 (Quil)	Rapid Naming	LeST	Irregular Z = -1.37	Reading rate SS <70
Phonology: Sounds age appropriate			Z = -2.34	Non-word Z = -3.09	Writing
Text (structure) Expository: Adequate – cohesion poor				Spelling (regular vs irregular)	
Listening to Spoken Paragraphs ScS = 7					
Recalling sentences – language memory ScS = 9				Non word spelling	

Step 5: Intervention initiatives

- Small-scale projects based on children's reading profiles (as identified on the speech to print profile)
- Our focus was showing how children's performance guided the intervention they received

Comprehension

Phonological Processing

Orthographic Knowledge

Step 5: Comprehension

- 8 children with below average RC participated in a 6 week intervention focusing on expository discourse
- 2 x 60 min group sessions per week
- Delivered by speech pathologist
- Involved content and topics from the classroom
- Based on Clarke et al., 2010

Vocabulary	Reciprocal teaching
Figurative language	Spoken expository
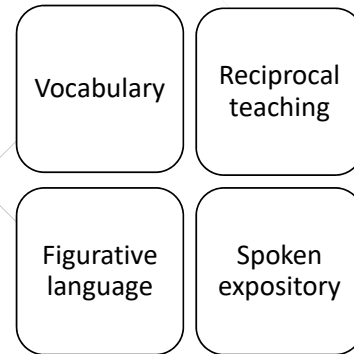
Step 5: Phonological processing

- 12 children with Specific Word Reading Difficulties participated in a 6 week intervention focusing on phonological processing
- 1 x 60 min group session & 1 x 30 min individual session per week
- Delivered by speech pathologist
- Firmly based on previous work by Gillon & Dodd (1995)
- Using the Lindamood Phoneme Sequencing Program (LiPS; Lindamood & Lindamood, 2011)

Phonological Awareness — Letter Sound Knowledge — Nonword Reading — Regular Word Reading
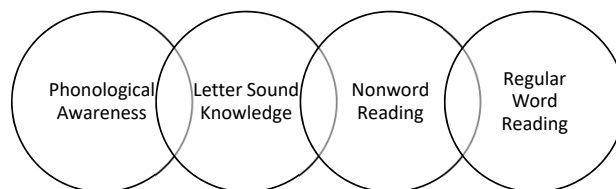
Step 5: Orthographic Knowledge

- 12 children with Specific Word Reading Difficulties received intervention for orthographic knowledge using the Reading Doctor App Letter Sounds 2 Pro (www.readingdoctor.com)

- 2 x a week for approx. 10-15 mins – under supervision of the speech pathologist

- The app was programmed individually based on each student's LeST results

Summary & Conclusion

Assessment is important

Assessment considerations

- Be cautious of over-assessment!
  - YARC vs PAT-R (Year 4)
  - YARC vs PM Benchmark (Year 1)
- Who does the assessment – YARC ?
- Which assessment to use?
- Who should we assess?
- When should the assessments take place?

Assessment is important

- High quality assessment results should drive instructional practices
  - Heggerty Program
  - Reading Dr software

Summary - Assessment

- High quality assessment revealed individual profiles of strengths and weaknesses

- Creating speech to print profiles allowed for targeted intervention at a level appropriate for specific students

- Improved teacher understanding of which skills to address in reading intervention and who should be involved.

- Providing targeted intervention resulted in an improvement in the skills that were addressed in intervention – highlighting that quality assessment drives intervention practices.

Take home messages

1. Shared vision and communication
2. Importance of evidence-based practice
3. Assessment is important
4. Early identification is crucial
5. Collaboration is key
   - Students, teachers, leaders, speech therapists, parents/carers, community and other specialists
   - Continue to be open to alternative points of view
6. Professional Development is not a once-off …
7. Research to practice takes time and effort

*Take home message
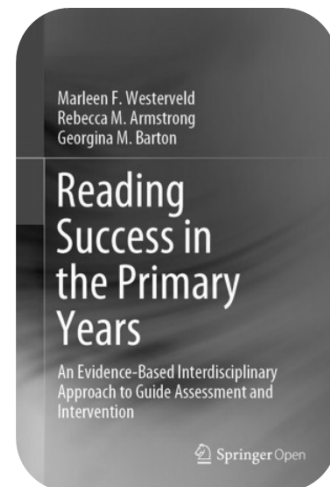
What will you learn?

Teachers:

- More detailed knowledge around assessment practices for individualised reading support
- The importance of acknowledging student voice (case studies)

School leaders:

- Evidence-based rationale for collecting and analysing student reading data

Speech pathologists:

- Confirmation that the speech pathologist is an integral member of the literacy team
- More detailed knowledge around support for students who struggle in reading.

Marleen F. Westerveld
Rebecca M. Armstrong
Georgina M. Barton

Reading Success in the Primary Years

An Evidence-Based Interdisciplinary Approach to Guide Assessment and Intervention

Springer Open

45

Questions and Feedback

@MWslp
@bec_armstrong18

A/Prof Marleen Westerveld
m.westerveld@griffith.edu.au
Dr Rebecca Armstrong
rebecca.armstrong@uq.edu.au
Prof Georgina Barton
Georgina.Barton@usq.edu.au

www.marleenwesterveld.com

READING ACHIEVEMENT CERTIFICATE

presented to _____

for _____

Date _____

Signed _____

Key References

- Catts, H. W., Hogan, T. P., & Adlof, S. M. (2005). Developmental changes in reading and reading disabilities. In H. W. Catts & A. G. Kamhi (Eds.), *Connections Between Language and Reading Disabilities* (pp. 25 - 40). Mahwah, NJ: Lawrence Erlbaum.

- Clarke, P. J., Snowling, M. J., Truelove, E., & Hulme, C. (2010). Ameliorating Children's Reading-Comprehension Difficulties: A Randomized Controlled Trial. *Psychological Science, 21*(8), 1106-1116.

- Gillon, G., & Dodd, B. (1995). The effects of training phonological, semantic, and syntactic processing skills in spoken language on reading ability. *Language, Speech, and Hearing Services in Schools, 26*(1), 58-68.

- Gillon, G. T. (2018). *Phonological awareness: From research to practice* (2nd ed.). The Guilford Press.

- Gough, P. B., & Tunmer, W. E. (1986). Decoding, reading, and reading disability. *Remedial and Special Education, 7*(1), 6-10. doi:10.1177/074193258600700104

Key References

- Serry, T., Seiler, A., Neilson, R., Leitao, S., Schambre, M., Westerveld, M. F., et al. (2016). Clinical guidelines for speech pathologists working in literacy. from http://www.speechpathologyaustralia.org.au/spaweb/Document_Management/Restricted/Clinical_Guidelines.aspx

- Snow, P. C. (2016) Elizabeth Usher Memorial Lecture: Language is literacy is language - Positioning speech-language pathology in education policy, practice, paradigms and polemics, International Journal of Speech-Language Pathology, 18:3, 216-228, DOI: 10.3109/17549507.2015.1112837

- Tunmer, W. E., & Hoover, W. A. (2019). The cognitive foundations of learning to read: a framework for preventing and remediating reading difficulties. *Australian Journal of Learning Difficulties, 24*(1), 75-93. doi:10.1080/19404158.2019.1614081

Feedback

SLPs: give teachers specific information on what individual students need. To assist differentiation – work together better.

Teacher: Gathering so much data – not always the right data – blown away by the speech to print profile – teachers loved it. Dept talks about being data literate – just puts pressure on teachers.

School leader – started to value SLPs – use all resources around you more effectively.

It was a really positive experience and I felt like I really did learn a lot of new information at that workshop.

Springer Open Overview

Reading Success in the Primary Years: An Evidence-Based Interdisciplinary Approach to Guide Assessment and Intervention

- Chapter 1: Reading Success
- Chapter 2: Methodology
- Chapter 3: Reading Success Results Across the Year Groups
- Chapter 4: Reading Self-Concept and Student Perceptions
- Chapter 5: Intervention Initiatives Across Three Levels of Instruction
- Chapter 6: Case Studies
- Chapter 7: Teacher Interviews and Recommendations: Feedback
- Chapter 8: Implications and transferability