Explainer

Why some secondary students struggle with reading

May 2024

The Australian Education Research Organisation (AERO) recommends the use of a multi-tiered system of supports (MTSS) to better assist Years 7 to 9 students struggling with foundational literacy and numeracy skills. If you aren't familiar with the MTSS framework, we recommend you start with AERO's Introduction to a Multi-Tiered System of Supports explainer.

This explainer outlines why some secondary students struggle with reading. It's the first part of a series of guidance created in partnership with the Dyslexia-SPELD Foundation (DSF).

Key points

At least 1 in 5 students enter secondary school without the reading skills they need to understand the written curriculum.

Evidence-informed frameworks for reading comprehension suggest that these skills relate to word reading, comprehension, or both.

Difficulties with word reading and comprehension are often related to problems with spelling, writing and mental health.

When a student starts secondary school, they're expected to read words and sentences accurately and fluently, allowing them to focus on the meaning of written texts ('reading comprehension'). However, around 1 in 5 students start secondary school without the skills they need to understand the meaning of their curriculum texts. This proportion is higher for students from low socio-economic backgrounds, from regional areas, and for First Nations young people (Australian Curriculum, Assessment and Reporting Authority [ACARA], 2023).

Secondary students may struggle with reading comprehension for different reasons. Some may not have received best-practice reading instruction in primary school (Coltheart & Prior, 2006), have experienced interruptions to schooling, or have a cognitive, physiological or psychological difficulty that prevents them from benefiting from best-practice instruction.

Regardless of the reason, students with reading difficulties can benefit from an MTSS (Scammacca et al., 2015; Solis et al., 2014; Vaughn et al., 2012). An MTSS approach provides high-quality reading instruction for all students, assessments to determine why a student is struggling with reading, and targeted intervention to support student learning needs. Our case study videos, Parafield Gardens High School (SA) and Mount Rowan Secondary College (VIC), are 2 examples of schools supporting students with reading using an MTSS framework.

A simple framework for reading comprehension

There are many frameworks that link skills (directly or indirectly) to reading comprehension. Some useful models include the Simple View of Reading (Gough & Tunmer, 1986), the Cognitive Foundations Framework (Hoover & Tunmer, 2020), Scarborough's Reading Rope (Scarborough, 2001), and the Reading Systems Framework (Perfetti et al., 2005).

Different frameworks of reading comprehension have different goals and, therefore, vary in complexity. However, they all divide the skills that contribute to reading comprehension into 2 main categories: word reading and language comprehension. Subsequent sections of this explainer outline these categories of skills students require to achieve reading comprehension.

Word reading

Word reading can be defined as the ability to read words accurately and fluently. This skill typically develops in tandem with the ability to spell words accurately and fluently.

A student's ability to read and spell accurately and fluently is dependent on their knowledge of the language of instruction's alphabetic system. Students need to develop a working knowledge of the letters or letter strings (graphemes) used to represent the speech sounds (phonemes) that occur in spoken English. This knowledge is often called 'phonic knowledge', commonly referred to as 'phonics'.

For example, if a student is trying to read the written word 'SHIP' for the first time, they need to know that the letters 's' and 'h' should be grouped together into a single grapheme **SH**, which corresponds to the phoneme **/sh/**. They also need to know that the grapheme **I** corresponds to the phoneme **/i/**, and the grapheme **P** corresponds to the phoneme **/p/**. Then they need to blend the phonemes **/sh/ /i/ /p/** together to form the word **'ship'**.

If a student is trying to spell the spoken word 'ship', they need to break the spoken word into its phonemes **/sh/**, **/i/ /p/**, then translate each phoneme into its grapheme **SH I P**, and then write those graphemes as the single word **SHIP**.

Each time a student reads or spells a new or novel word, their orthographic representation/knowledge (spelling) of that word gets stronger. At some point, this knowledge becomes so strong that a student no longer needs to read that word grapheme-by-grapheme or spell it phoneme-by-phoneme. Instead, they can read or spell that word almost 'automatically', which makes their reading or spelling of that word both accurate and fluent (Dehaene, 2013).

In addition to phonic knowledge and orthographic knowledge, to read and spell accurately and fluently, students need to understand morphology, which is knowledge of the units of meaning in a word, including prefixes (**RE**), roots (**MARK**), and suffixes (**ABLE**). This knowledge supports the accurate reading and spelling of new words. For example, imagine seeing the word 'CONSTITUTION' for the first time. If you can read the word 'CONSTITUTE', and you know that the letter 't' followed by the morpheme **ION** results in a syllable pronounced **/shun/**, there's a good chance you'll read this new word accurately. You may also get some clues about the meaning of that word from its root.

By middle primary, it's expected that students will have learned the orthography of many common words and have the phonic and morphological knowledge needed to read new words successfully (Castles et al., 2018). However, many students enter secondary school without these foundational word reading skills (Vaughn & Fletcher, 2012), and addressing comprehension alone isn't sufficient to support students who are unable to decode words (White, 2010).
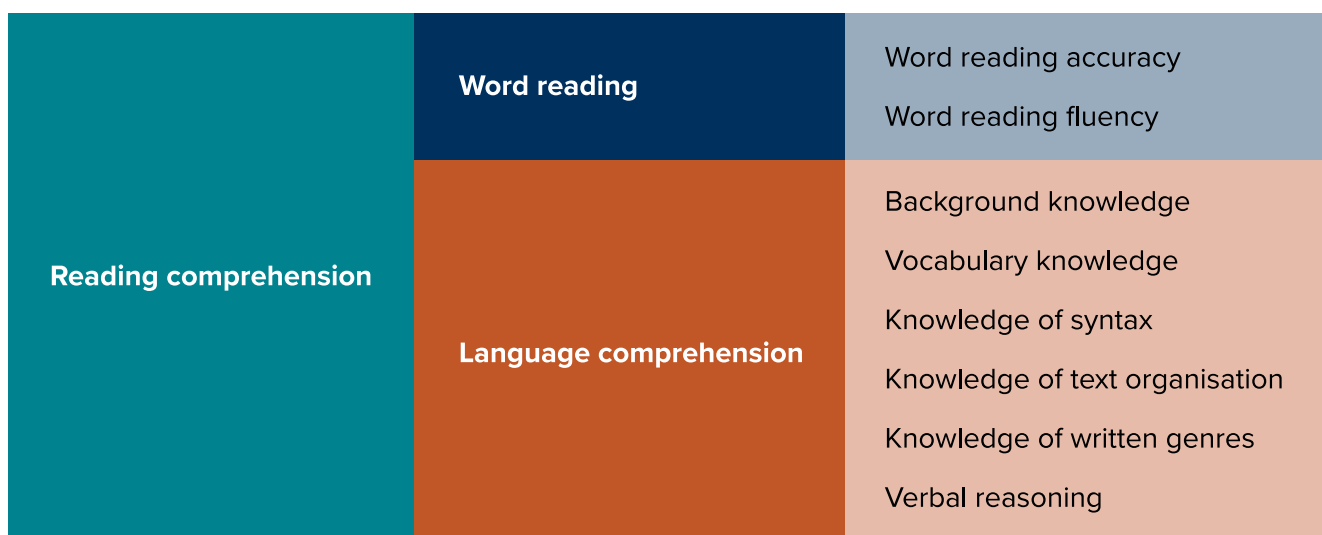
Language comprehension

Language comprehension is the ability to use linguistic knowledge to understand what's being read. It's a complex construct, requiring knowledge of syntax (i.e., word order within a sentence), text organisation (the sequence of ideas across a text), text type (e.g., fiction, non-fiction, essays, poetry), and verbal reasoning (e.g., figurative language, making inferences). However, the most critical components of comprehension are relevant background knowledge and vocabulary (Perfetti & Stafura, 2014). Vocabulary knowledge alone accounts for 50–60% of the variance in reading comprehension (Stahl & Nagy, 2006).

It's important to note that some secondary students' reading comprehension difficulties are caused by weaknesses in spoken comprehension skills alone. Some students may have a specific difficulty that impairs their ability to acquire spoken language skills (For more information on Developmental Language Disorder, see for example, Adlof & Hogan, 2018; Calder et al., 2022). And some students may have long-term reading difficulties that impede their development of the comprehension skills that emerge from reading (Adlof & Hogan, 2018; Cunningham & Stanovich, 1998).

Students need targeted intervention when their language comprehension levels limit access to year-level curriculum. While some commercial off-the-shelf interventions (see Example Interventions for Word Reading) have shown effects in research settings, students who receive commercial language comprehension interventions generally need further intervention in curriculum-specific knowledge (Donegan & Wanzek, 2021). Current evidence suggests that efficient support for comprehension should embed intervention within core curriculum. Figure 1 provides a simple framework for reading comprehension that outlines skills supporting word reading and comprehension.

Figure 1: Framework for reading comprehension skills supporting word reading and comprehension

Reading comprehension	Word reading	Word reading accuracy
		Word reading fluency
	Language comprehension	Background knowledge
		Vocabulary knowledge
		Knowledge of syntax
		Knowledge of text organisation
		Knowledge of written genres
		Verbal reasoning

Table 1 is designed to help schools match best-practice reading instruction (as explained in AERO's resources) with evidence-informed frameworks and curriculum documents.

Table 1: Alignment between reading frameworks and curriculum documents

Reading framework			Curriculum document		AERO guidance
Simple View of Reading	**Cognitive Foundations Framework**	**Scarborough's Reading Rope**	**ACARA**	**National Literacy and Numeracy Learning Progressions Version 3**	**AERO Supporting Secondary Student Reading resources**
Word Recognition	Phonemic Awareness	Phonological Awareness	**Language:** Phonics and Word Knowledge	Phonological Awareness PhA1 – PhA5	Not directly addressed; incorporated into assessment measures and intervention resources targeting overall word reading skill
	Knowledge of the Alphabetic Principle	Decoding (and Spelling)	**Language:** Phonics and Word Knowledge Expressing and Developing Ideas **Literacy:** Interpreting, Analysing, Evaluating and Creating Texts	Phonic Knowledge and Word Recognition PKW1 – PKW8 Fluency FlY1 – FlY6 Understanding Texts UnT4 – UnT6	Why Some Secondary Students Struggle with Reading Figure 1: Accurate word reading (decoding) and automatic word recognition (fluency) Screening and assessment: Inclusion of measures evaluating word reading accuracy and/or spelling (phonics and orthographic knowledge), reading fluency and reading rate Intervention: Inclusion of programs that target phonics, orthography, reading accuracy and spelling
		Sight Word Recognition			

Reading framework			Curriculum document		AERO guidance
Simple View of Reading	Cognitive Foundations Framework	Scarborough's Reading Rope	ACARA	National Literacy and Numeracy Learning Progressions Version 3	AERO Supporting Secondary Student Reading resources
Language Comprehension	Linguistic Knowledge Phonological Knowledge Syntax Knowledge	Language Structures Vocabulary	**Language:** Language Variation and Change Language for Interaction Text Structure and Organisation Expressing and Developing ideas **Literature:** Literature and Context Responding to Literature Examining Literature Creating Literature **Literacy:** Texts in Context Interacting with Others Interpreting, Analysing, Evaluating Creating Texts	Understanding texts UnT3 – UnT11	Why Some Secondary Students Struggle with Reading Figure 1: Background knowledge; vocabulary knowledge; knowledge of syntax; knowledge of text organisation; knowledge of written genres; and verbal reasoning Screening and assessment: Inclusion of measures evaluating oral language, listening comprehension, and reading comprehension
	Background Knowledge and Inferencing Skills	Verbal Reasoning Background Knowledge			

Spelling and writing

Reading skills (wording reading and language comprehension) and writing skills (spelling and written expression) are closely related. While the relationship between these 2 skills is often reciprocal, they're not simply 'two sides of the same coin' (Ehri, 2000, p. 19). In fact, spelling assessments and interventions can be more sensitive tools for developing word reading, which is why spelling is included in further guidance on assessment and intervention.

Reading comprehension and its written counterpart – written expression – are also closely related. Successful writing is a product of the fluent and coordinated execution of separate skill areas: transcription (including handwriting, spelling, and punctuation) and composition (including vocabulary, topic knowledge, syntax, text organisation, genre and audience awareness) (Berninger et al., 2002). (See AERO's literature review on writing and writing instruction for more information.) The coordination of these skills requires strong executive functioning – planning, organising, and monitoring performance – and places high loads on working memory (Berninger et al., 2002).

It's an oversimplification to say that reading comprehension and written expression are reversible processes. However, many of the instructional tasks that target written expression have benefits for reading comprehension, and vice-versa. For example, engaging in close reading, analysis and discussion of well-written texts within academic disciplines has been found to be effective for teaching knowledge of different writing genres (Graham et al., 2019). Practise applying the sentence patterns (syntax), vocabulary, organisational structures and 'voice', or style, of well-written texts also reinforces comprehension of these texts (Kamil et al., 2008). This means that written expression instruction is likely to have considerable benefits for reading comprehension. AERO's guidance on writing instruction provides further information on supporting students' writing development.

Mental health

Reading skills and mental health are also closely related. Difficulties with reading may have a causal effect on a student's self-concept, anxieties about reading and writing, and their ability to engage with reading instruction (McArthur, 2022).

There are few assessments, and even fewer evidence-based interventions, to support self-concept, anxiety or levels of engagement in students with reading difficulties (Anderson et al., 2023). However, there may be practical things schools can do to minimise the negative impact of reading and writing difficulties on secondary students' wellbeing. There are experts in both reading and mental health who may have the expertise to carefully combine targeted and intensive reading and wellbeing training in a way that minimises the use of written materials. This is a critical consideration since many clinical interventions for student wellbeing depend heavily on training via text, which denies access to students with reading difficulties.

Summary

Many students enter secondary school with word reading and comprehension abilities below the level they need to comprehend the texts that help deliver the curriculum. Research suggests that an MTSS for reading can improve outcomes for reading and spelling (Solis et al., 2014; Vaughn & Fletcher, 2012; Scammacca et al., 2015).

More information

AERO's MTSS resources provide further information about using MTSS to support students, including:

- how to support secondary students who struggle with reading using an MTSS decision tree
- how to assess these students to identify reading skills in need of improvement
- how to choose interventions that target these gaps.

Acknowledgement

References

Adlof, S. M., & Hogan, T. P. (2018). Understanding dyslexia in the context of developmental language disorders. *Language, Speech, and Hearing Services in Schools, 49*(4), 762–773. https://doi.org/10.1044/2018_LSHSS-DYSLC-18-0049

Anderson, L. L., Meline, M., & Harn, B. (2023). Student engagement within adolescent reading comprehension interventions: A systematic literature review. *Journal of Education, 203*(2), 258–268. https://doi.org/10.1177/00220574211032327

Australian Curriculum, Assessment and Reporting Authority. (2023). *NAPLAN 2023 commentary*. https://www.acara.edu.au/reporting/national-report-on-schooling-in-australia/naplan-national-results

Berninger, V. W., Abbott, R. D., Abbott, S. P., Graham, S., & Richards, T. (2002). Writing and reading: Connections between language by hand and language by eye. *Journal of Learning Disabilities, 35*(1), 39–56. https://doi.org/10.1177/002221940203500104

Calder, S. D., Brennan-Jones, C. G., Robinson, M., Whitehouse, A., & Hill, E. (2022). The prevalence of and potential risk factors for developmental language disorder at 10 years in the Raine Study. *Journal of Paediatrics and Child Health, 58*(11), 2044–2050. https://doi.org/10.1111/jpc.16149

Castles, A., Rastle, K., & Nation, K. (2018). Ending the reading wars: Reading acquisition from novice to expert. *Psychological Science in the Public Interest, 19*(1), 5–51. https://doi.org/10.1177/1529100618772271

Coltheart, M., & Prior, M. (2006). Learning to read in Australia. *Australian Journal of Learning Disabilities, 11*(4), 157–164. https://doi.org/10.1080/19404150609546820

Cunningham, A., & Stanovich, K. (1998). What reading does for the mind. *American Educator*, 22, 8–15.

Dehaene, S. (2013). Inside the letterbox: How literacy transforms the human brain. *Cerebrum*, 7. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3704307/

Donegan, R., & Wanzek, J. (2021). Effects of reading interventions implemented for upper elementary struggling readers: A look at recent research. *Reading and Writing, 34*(8), 1943–1977. https://doi.org/10.1007/s11145-021-10123-y

Ehri, L. C. (2000). Learning to read and learning to spell: Two sides of a coin. *Topics in Language Disorders, 20*(3), 19–36.

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

Graham, S., MacArthur, C., & Hebert, M. (2019). *Best practices in writing instruction* (3rd ed.). Guilford Press.

Hoover, W. A., & Tunmer, W. E. (2020). *The cognitive foundations of reading and its acquisition*. Springer International Publishing. https://doi.org/10.1007/978-3-030-44195-1

Hudson, C., & Angelo, D. (2020). From the periphery to the centre: Securing the place at the heart of the TESOL field for First Nations learners of English as an Additional Language/Dialect. *TESOL in Context, 29*(1), 5–35. https://doi.org/10.21153/tesol2020vol29no1art1421

Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., & Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices* (IES Practice Guide NCEE 2008-4027). National Center for Education Evaluation and Regional Assistance. https://ies.ed.gov/ncee/wwc/practiceguide/8

McArthur, G. (2022). Poor reading and anxiety (PRAX): Building a theory and practice. *Australian Journal of Learning Difficulties, 27*(1), 169–180. https://doi.org/10.1080/19404158.2022.2054834

Perfetti, C., & Stafura, J. (2014). Word knowledge in a theory of reading comprehension. *Scientific Studies of Reading, 18*(1), 22–37. https://doi.org/10.1080/10888438.2013.827687

Perfetti, C., Landi, N., & Oakhill, J. (2005). The acquisition of reading comprehension skill. In M. J. Snowling, & C. Hulme (Eds.), *The science of reading: A handbook* (pp. 227–247). Blackwell Publishing. https://doi.org/10.1002/9780470757642.ch13

Scammacca, N., Roberts, G., Vaughn, S., & Stuebing, K. (2015). A meta-analysis of interventions for struggling readers in grades 4–12: 1980–2011. *Journal of Learning Disabilities, 48*(4), 369–390. https://doi.org/10.1177/0022219413504995

Scarborough, H. S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman, & D. Dickinson (Eds.), *Handbook for research in early literacy* (pp. 97–110). Guilford Press.

Solis, M., Miciak, J., Vaughn, S., & Fletcher, J. M. (2014). Why intensive interventions matter: Longitudinal studies of adolescents with reading disabilities and poor reading comprehension. *Learning Disability Quarterly, 37*(4), 218–229. https://doi.org/10.1177/0731948714528806

Stahl, S. A., & Nagy, W. E. (2006). *Teaching word meanings.* Lawrence Erlbaum Associates Publishers.

Vaughn, S., & Fletcher, J. M. (2012). Response to intervention with secondary school students with reading difficulties. *Journal of Learning Disabilities, 45*(3), 244–256. https://doi.org/10.1177/0022219412442157

Vaughn, S., Wexler, J., Leroux, A., Roberts, G., Denton, C., Barth, A., & Fletcher, J. (2012). Effects of intensive reading intervention for eighth-grade students with persistently inadequate response to intervention. *Journal of Learning Disabilities, 45*(6), 515–525. https://doi.org/10.1177/0022219411402692

White, N. C. (2010). The educational therapist in practice. In M. Ficksman, & J. U. Adelizzi (Eds.), *The clinical practice of educational therapy: A teaching model* (pp. 215–236). Routledge. https://doi.org/10.4324/9780203855492

Willingham, D. T. (2006). The usefulness of brief instruction in reading comprehension strategies. *American Educator, 30*(4), 39–50.

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