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Bulletin

Unlocking Meaning: A Focus on Reading Comprehension

From the President

Geoffrey Ongley

I'd like to begin by warmly thanking all of our members for their continued support of LDA, as we celebrate our association's 60th year! Your commitment to evidence-informed practice in supporting students with learning difficulties is what drives everything we do. I'd also like to extend my heartfelt thanks to the many volunteers who contribute their time, expertise, and energy to LDA. Your dedication is the backbone of our organisation.

As you may have noticed, the LDA Bulletin has shifted from three editions to two per year. The decision to make this change was not taken lightly. In short, significantly increasing costs, the hefty load editing and production puts on volunteers, and risk of notable membership pricing increases all factored in as concerns of maintaining the status quo. As a result of our analysis and this decision, we are able to maintain this quality, practical, and valuable publication, ensuring our volunteers are working in a sustainable way, while also avoiding an increase to membership fees in 2025. A big win for all!

This year, we continue to run some fantastic PD, with sessions such as The ADHD Puzzle, Using the WIAT to Guide Interventions, and our recent Building Skilled Readers conference have all been well received. Thank you to all who have attended or shared these events with colleagues—we love seeing teachers benefit from the practical, high-impact PD that LDA continues to offer.

We're also pleased to report that the professional learning offerings that we now include with your membership will have more content added soon. If you haven't utilised or engaged in the existing courses yet, we encourage you to jump in! You can find this curated content under 'Training' -> 'My Courses' on the LDA website. Our paid On-Demand catalogue continues to grow as well, and we're excited to see usage on the rise since our launch of the platform last year.

Our social media reach continues to grow, with LinkedIn, Instagram and Facebook all continuing to gain further reach. We have had recent posts on Facebook alone reaching over 42,000 individuals. It's a wonderful reflection of the growing interest across Australia in improving teacher practice using effective, evidence-informed instruction, and recognition of the impact this has on all students; including those with learning difficulties.

Finally, as I touched on earlier, this year marks LDA's 60th anniversary – a milestone we're very proud to celebrate. Over six decades, LDA has evolved from a small group of committed educators into a nation-wide association that aims to ensure teachers are equipped with the tools they need to support students with learning difficulties. It is indeed the business of every teacher. As we reflect on this rich legacy, we're also looking ahead with fresh energy and a renewed commitment to advocacy, professional learning, and practical support for educators.

Thank you again for your continued support of LDA, and I truly hope you enjoy the wonderful articles you will find in this edition of the LDA Bulletin!

Geoffrey Ongley
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Geoffrey Ongley is the Co-founder, Director and CEO of Training 24/7, as well as the CEO of Get Reading Right. Educationally, he has completed a Bachelor of Computer Science, Master of Business Administration (Finance), and GradCert in Professional Legal Studies.

In this issue of the Bulletin...

Laura Glisson, Editor, LDA Bulletin

I am pleased to bring you the first edition of the Bulletin for 2025 entitled *'Unlocking Meaning: A Focus on Reading Comprehension'*.. This edition includes five fantastic articles written by classroom teachers, school leaders, researchers and speech pathologists – all on the topic of reading. Also included is a book review and story from one of our consultant members, Crystal Flood.

Our feature article is *'Making stronger learning gains with integrated reading and writing instruction'* by Jocelyn Seamer. In this article, Seamer outlines how integrating reading and writing, rather than teaching each in isolation, leads to stronger student outcomes. She explains how shared skills, explicit teaching, and careful planning informed by cognitive science support literacy development for all learners.

The second piece is a case study written by speech pathologist, Kerith Roby. Roby shares an example of how one school in Queensland has used the role of a speech pathologist to build capacity and support Tier 1 instruction. Roby shares the positive impact on student outcomes in the areas of phonological awareness and spelling.

Next, we have an excerpt from Dr Nathanial Swain's new book, *'Harnessing the science of learning: Success Stories to Kickstart Your School Improvement'*, published by Routledge. In this excerpt of a chapter, co-authored with literacy leader and speech-language pathologist Shane Pearson, Swain and Pearson share research and practical ideas to support comprehension instruction in the classroom.

Of equal interest is Doug Lemov's article *'The Science of Reading: It's About Knowledge not "Transferable Skills"'* which unpacks the significance of the role that background knowledge (as opposed to transferable skills) plays in reading comprehension. Lemov draws on research and classroom examples to show that students understand texts better when they have relevant knowledge and urges educators to shift focus from practising abstract strategies to building knowledge that enables deep understanding.

'Can children be taught to comprehend what they read?' follows, written by Professor Daniel Willingham. In this article, Willingham explains that while brief comprehension strategy instruction is useful, extended practice offers no added benefit. He argues that basic comprehension draws on oral language processes, but more advanced, analytical reading skills must be taught explicitly.

Following this, Nath Owen shares his review of Dr Swain's book, with some key take-home messages of this fantastic text. Hema Desai, LDA Education Manager, then shares a review of our recent online course, *'Building Skilled Readers – Best Practice in Reading Instruction'*.

Finally, we finish with a story from one of our consultant members, Crystal Flood, who shares her journey to becoming a literacy consultant. This is a reprint of the article published in the December edition last year, following the correction of several errors made by us during the publication process. Our apologies to Crystal for the oversight.

A sincere thanks to our contributors for this issue. We appreciate your generosity in sharing your knowledge and expertise with our readers. If you are interested in contributing to a future edition of the Bulletin, please get in touch at bulletin.editor@ldaustralia.org. I would also like to thank Dr Ann Bellert who supported as assistant editor for this edition of The Bulletin.

Laura Glisson, Editor, LDA Bulletin

Laura is a Certified Practising Speech Pathologist (Speech Pathology Australia) with over 15 years of experience working with school-aged children and young people with speech, language and literacy difficulties. Laura works as the Co-director and Co-founder of Tracks to Literacy, where she provides professional learning to educators and clinicians on oral language and literacy instruction, intervention and assessment. Laura also works clinically with upper primary and secondary-aged students with language, literacy and associated mental health difficulties, and is Director of Fieldwork (Speech Pathology) at Curtin University in Perth.

Making stronger learning gains with integrated reading and writing instruction

Jocelyn Seamer

Ensuring that every student leaves primary school a competent, functional reader and writer is no simple task. When it comes to achieving this goal, there are three aspects to consider; the content covered, the type of instruction provided and the way time is allocated (Shanahan, 2023).. While the 'what' of previous (and possibly current) practice has remained constant over time, the 'how' of instruction is rapidly changing as an increasing number of leaders and teachers come to learn the recommendations from research about what leads to the greatest learning gains for the most students.

Where we have come from

Traditionally, literacy blocks have been divided into separate reading and writing hours, often leading to decontextualised instruction. Reading instruction typically centered on levelled texts and comprehension strategies, frequently through literature circles where students assumed roles to discuss texts and share responses. While seemingly engaging, this student-driven approach contradicts cognitive science findings that novices learn better through fully guided instruction (Clark, Kirschner & Sweller, 2012).

Writing instruction commonly followed a workshop model; a brief mini-lesson, independent writing with teacher conferences, and sharing time. Though labelled as 'explicit teaching,' these 10-minute demonstrations followed by independent practice fall short of the current understanding of explicit instruction. Both reading and writing workshops suffered from excessive time spent on self-directed tasks that many students weren't equipped to handle effectively.

These approaches were founded on the assumption that exposure to quality texts and adequate practice time would naturally develop skilled readers and writers. Classroom experience, particularly with struggling learners, has proven this assumption inadequate for meeting all students' needs.

The case for integrated reading and writing instruction

As systems, leaders and teachers become more aware of the findings of research, a better understanding of the critical skills and knowledge that students require to be literate is emerging. A useful model to conceptualise these skills and knowledge is the *Language Literacy Network* by Dr. Jan Wasowicz (2021).

As well as outlining the critical components necessary to become a skilled reader and writer, The Language Literacy Network reflects that, while

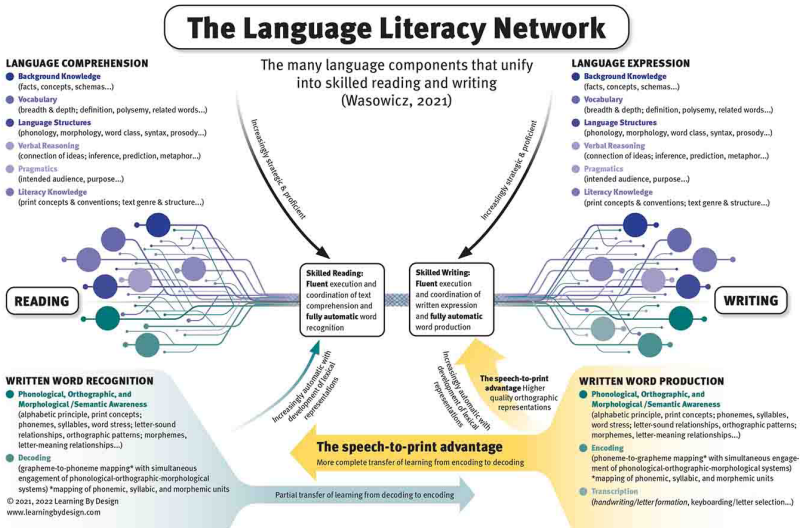

Image 1. The Language Literacy Network by Dr. Jan Wasowicz (2021)

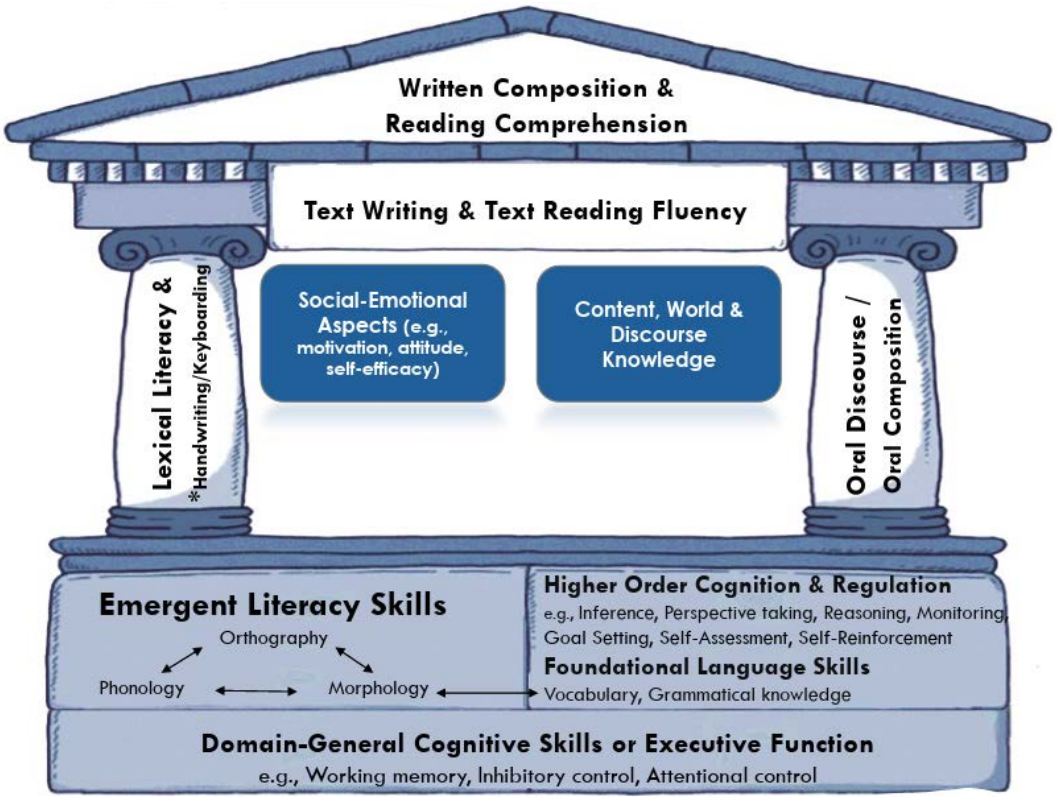

Image 2. Interactive Dynamic Model of Literacy Development (Kim, 2017)

reading and writing are not identical, they draw on essentially the same skills (Kim, 2023). Further, they utilise common cognitive and linguistic knowledge (Philippakos, 2023). This knowledge can be said to take four forms:

1. Metaknowledge (knowing about reading and writing and how they are used),
2. Domain knowledge about the content of texts,
3. Knowledge about text attributes (e.g., word-level structure and function, syntax and text format) and,
4. Procedural knowledge or knowing how to read and write (Fitzgerald & Shanahan, 2000).

Another model connecting reading and writing skills and knowledge is the *Interactive Dynamic Literacy Model* (Kim, 2020). This model builds on the work of previous research and posits that reading and writing share a common set of skills and knowledge, and they are impacted by a person's underlying language and cognitive skills (Kim, 2020). Kim presents this model as a structure with a foundation at the bottom and a roof supported by two pillars. The foundation of the structure is made up of foundational language, emergent literacy skills and cognitive skills (working memory and executive functioning). The two upright pillars represent lexical (word-level) reading and spelling and discourse-level oral language. This model presents discourse (text)-level literacy as the most sophisticated element. It is important to note that this model represents a hierarchy of skills, with each one building on those below, and that learning occurs at lexical, sentence, and text levels.

The implications of these models are clear. If we want our students to be strong readers and writers, all of these skills and knowledge must be well-developed with appropriate focus given to the development of foundational skills and capabilities as well as more complex elements.

Due to the shared foundation of knowledge and skills, there is a strong push for the integration of reading and writing instruction. A growing body of research supports this. Reading a text and summarising it in writing, not only helps students better understand the text, but also makes them better writers as they engage in word choice and deliberately structure sentences to convey a message (Graham & Nusrat, 2023).

Not only does integrated reading and writing instruction result in stronger learning outcomes, it creates efficiencies in the classroom. For example, when teaching students vocabulary, it isn't necessary to teach this for reading and then teach it again for writing. Teaching new vocabulary once and then having students apply this knowledge in both reading and writing, creates welcome efficiencies and maximises student learning.

Factoring research from cognitive science into unit design

When considering the creation of an effective text-based unit that integrates both reading and writing, it is important to consider several factors, including the structure of the unit, which areas of knowledge and skill the unit will focus on, and how we will support the learning of a wide range of students in our classes.

The first thing to consider is cognitive load. Cognitive load theory has been described as the single most important theory for teachers to understand (William, 2017). This theory helps us understand how many cognitive elements a person can manage simultaneously (cognitive load). Findings from research indicate the following important concepts teachers must remember when planning for successful instruction:

1. Limit how much new information is presented to students

When completing a task, a student's ability to learn effectively will be significantly impacted by how many new pieces of information they are expected to hold in working memory. This varies with age, however, the average number of items that younger children are said to be able to hold in working memory is 2-3. For older students and adults, this number is said to be 7 (+/-2) (Cowan, 2016). When we plan for instruction we must carefully manage how many new elements we include and how many of them have been developed to automaticity. If students need to manage eight elements to complete a task but are only automatic in 3 of them, this will place a high demand on working memory and make it less likely that students will be successful.

2. Break tasks into chunks

Regardless of a person's skill or experience, they can only consciously focus on one thing at a time (Sousa, 2022). It is imperative that teachers understand that tasks must be broken down into small 'chunks' and managed one at a time.

3. Allow enough time for practice and rehearsal

For learning to be retained and used in meaningful contexts, skills and knowledge must be rehearsed and practised over time. This means that students will have a greater chance of retrieving knowledge and performing skills fluently, making it easier to utilise in the future (Sousa, 2022). The implication for designing a text-based unit is that we must carefully consider how many new elements are being introduced, so that we have enough time for sufficient practice and rehearsal.

Content inclusions in a text-based unit

If our phonics lessons manage the 'bottom of the network', the text-based unit must do the heavy lifting for all other elements across a school year. The first thing to remember is that reading and writing float on a sea of talk (Britton, 1970), and language development must be considered when designing a text-based unit. Each genre and text type has particular language requirements for comprehension and writing to be successful. Language features, vocabulary and literary devices are chosen to align with the genre focused on in each unit.

Vocabulary

Explicit vocabulary instruction is a must in any literature-focused unit. A strong knowledge of vocabulary means knowing what a word means in various contexts, how it relates to other words, and how to generate other words from it (through morphology). Possessing this knowledge makes students better readers and better writers. Instruction must enhance a student's understanding of a word's meaning and use (McKeown, 2023). Choosing text with appropriately challenging vocabulary and teaching the most challenging of these words explicitly means that we are setting the stage for students to grow their vocabularies to support reading and writing.

Syntax

The next language skill to consider in designing a text-based unit is syntax. Syntax involves the arrangement of words in sentences and phrases. The syntax of spoken and written language is different, so we must teach students how sentences are constructed in academic and more formal texts. Failing to develop an understanding of how sentences operate for reading and writing means that students are at a disadvantage in their school years (Phillips & Willis, 2022). In addition to studying different sentence types in a text-based unit, daily sentence level writing is essential.

Ensuring that every student leaves primary school a competent, functional reader and writer is no simple task.

Discourse

Finally, discourse (text) level elements are considered in planning. This includes comprehension strategies such as inference, text structures, features and purpose alongside elements such as perspective-taking and reasoning. A quality text-based unit gives the same weight to comprehending texts as it does to writing at text level. Ensuring that attention is shared between these two areas results in stronger learning outcomes. For example, teaching text structure during writing lessons supports comprehension during reading lessons (Graham & Nusrat, 2023). It is essential to plan for robust conversation and deep thinking about texts to avoid falling into old habits of asking comprehension questions that have pre-determined answers. These do little to engage students in deep thinking and, therefore, deep comprehension. Beck et al (2021) define the role of the teacher during text reading as a facilitator of thinking rather than that of 'quiz master'. However, this idea is not a return to the practices of literature circles. Rather, lessons are conducted as a whole class with the teacher assuming responsibility for carefully planning and conducting instruction. Students are not asked to decide on what comes next.

Connecting text-level reading with text-level writing does not mean that the genre of texts students write must be the same as the genre of text read during a unit. It is preferred that texts in a text-based unit are used as a stimulus for both comprehension and writing, rather than being a model for students to replicate. In a text-based unit, the teacher breaks down the elements of the text being studied and teaches them explicitly. Students are given the opportunity to rehearse or practise these elements over time to build fluency and are never left in the position of having to 'draw out' or 'acquire' the learning on their own.

Supporting students with learning difficulties in working with rich literature

One of the challenges in planning a text-based unit is that while students typically learn in the same fundamental way, they do so with differing levels of ease and speed (Dehaene, 2021). Different students require different amounts of practice to transfer new learning to long-term memory. This may make it seem impossible to teach sentence-level and text-level reading and writing to the whole class; however, with planning and some core principles to guide our actions and decisions, supporting students with learning difficulties is more achievable than it may appear.

Principle 1: Focus on one novel element at a time

Making the decision to teach fewer concepts and focus on consolidation and depth of application means ample opportunity for core, Tier 1 instruction to be as inclusive as possible. This involves breaking down new elements of learning and teaching them one at a time, providing the opportunity for rehearsal and practice and ensuring that we are supporting cognitive load by only asking them to actively focus on one novel element at a time. The goal should be to create a safe, successful environment for every student to thrive. Students who feel safe and secure in their learning are more successful because they can actively focus on learning rather than having their focus devoted to safety (Sousa, 2022).

Principle 2: Include adjustments and accommodations

Just because a student has difficulty lifting words from the page or putting them onto the page, doesn't mean that they cannot engage with a rich text or share ideas about that text. Students with dyslexia and other challenges can think about characters, plot development and the inferential aspects of a text. Teachers should be careful to select texts from Year 3 onwards that are available as audiobooks. This ensures that all students can engage with the texts read in the classroom. Similarly, adjustments should be provided for writing within the unit. Adjust expectations of what students will write within lessons to align with their current level of transcription, but also provide adjustments for them to capture their ideas, such as speech-to-text features on devices.

Principle 3: Pre-teach vocabulary

Pre-teaching vocabulary and domain-specific knowledge before they are encountered in the classroom can help the learner come to lessons with enough of a head start to engage in the lesson fully. For hyperlexic students who can lift words from the page but struggle to understand them, providing an overview of the section of text to be studied before it is read as a class helps them to be a fully present and participating member of the class. Tier 2 intervention occurring after instruction is becoming more widely understood, but schools may not be as aware of front-loading content as a support option.

Conclusion

Integrating reading and writing in all layers of language (words, sentences, and texts) reflects research about the nature of these two skills and how we can maximise learning. Using rich text as the stimulus for the development of both comprehension and writing and applying the core principles for the cognitive sciences in our planning means that we are setting students up for success, which is, after all, our primary responsibility as teachers.

About the author

Jocelyn Seamer is an author, instructional coach, and facilitator of professional learning. She works with schools and teachers to help them develop practice that reflects the evidence base of explicit instruction and literacy acquisition. Jocelyn's first book, 'Reading Success in the Early Primary Years: A Teacher's Guide to Implementing Systematic Instruction' was released in December 2022.

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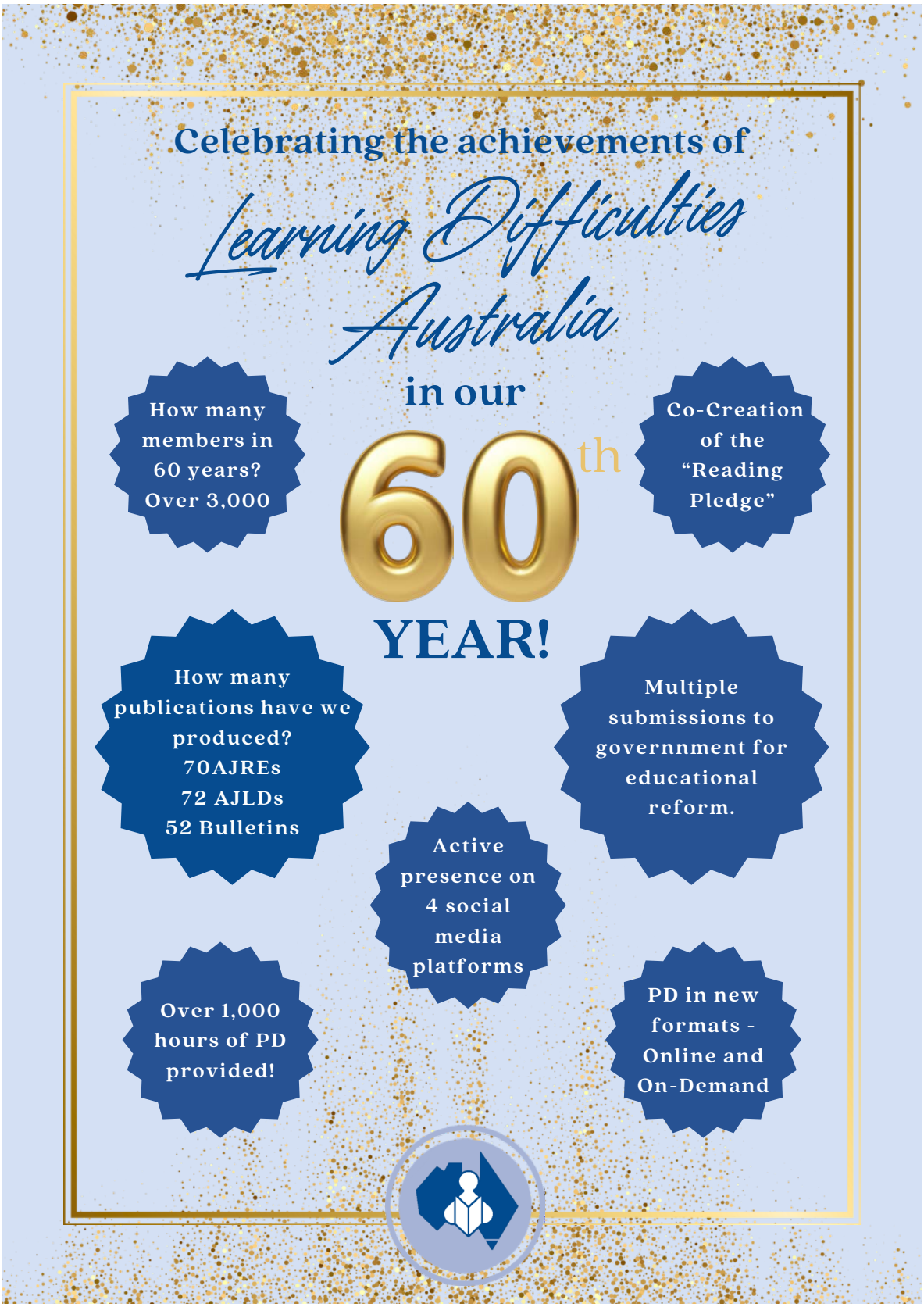


Collaboration between SLP and teachers – One primary school's journey

Kerith Roby

The benefits of speech pathologists working in schools, and the resulting improved educational and social outcomes for students has been well researched (Reynoso, 2024, Sylvan et al, 2023). Speech pathologists play an important role in enhancing the quality of children's speech, language, communication and swallowing competencies to promote successful interaction in curriculum learning and the broader education environment. (Speech Pathology Australia, 2022). It is recognised that language skills underpin all curriculum areas of learning (Snow, 2010). The skills and knowledge of Speech-Language Pathologists (SLPs) in language and literacy acquisition mean that there is a role for SLPs to support curriculum learning in schools and that SLPs should have a role in school-based literacy teams (Ehren, 2000; Speech Pathology Australia, 2021; Spracher, 2000; Sylvan et al, 2023).

Increasingly, schools in Australia are using a Response to Intervention (RTI) model to ensure the provision of high-quality classroom instruction, progress monitoring assessment and early identification and intervention for those students requiring more educational support (de Bruin et al, 2023; Speech Pathology Australia, 2022). RTI consists of three tiers:

- **Tier 1:** effective, evidence-based classroom teaching and progress monitoring, aiming to maximise the learning of all students.
- **Tier 2:** students who do not make sufficient progress at Tier 1 receive more intensive support and progress monitoring, targeted at areas of difficulty. This support is often delivered in small groups.
- **Tier 3:** students who do not make sufficient progress at Tier 2 receive diagnostic assessment and more intensive, individualised intervention.

(American Institutes for Research, 2023; Colenbrander & Kohnen, 2023, de Bruin K et al, 2023).

A speech pathologist's role working in schools in Australia includes working with students who have identified speech, language or communication needs (also known as SLCN). SLPs in schools work with these students, their families, and educators to identify and implement curriculum adjustments and provide teachers with strategies to increase the student's learning and participation at school. This is often achieved by working at Tiers 2 and 3, through input into teacher planning, assessment, individual/group therapy, and parent/teacher/teacher aide training programs (Education QLD, 2019).

Case study

This article presents a case study describing one school's approach to providing speech pathology services since 2019, and the positive educational and staff outcomes that have resulted. It is hoped that this description of collaborative, interdisciplinary approach to supporting learning for students vulnerable to under-achievement will encourage other schools to consider how they may use speech-language pathology services in their schools.

The author is a Speech-Language Pathologist with 25 years of experience working to improve the oral and written communication skills of children and young people, currently employed at a Catholic primary school of 600 students in regional Queensland. This position was created with clear goals in mind; the stated primary goals of this particular position in the school are:

1. Tier 1 – support teachers and build their capacity, especially in the areas of oral language and literacy instruction, with a deep focus on interdisciplinary collaboration.
2. Tier 3 – complete diagnostic assessment of individual students who have not responded adequately to Tier 1 and Tier 2 supports and consequently are at risk of experiencing significant language/literacy difficulties.

Approximately 70% of my time is spent supporting teachers and students at Tier 1. This involves co-teaching in classrooms at teacher request ('on the job learning' for teachers), involvement in cohort curriculum and unit planning, and delivery of targeted professional training. About 20% of my time is spent completing comprehensive assessments for Tier 3 students, which is followed by advice and support to parents and school staff based on the assessment results. My remaining time is devoted to supporting various staff running Tier 2 language/literacy interventions in the school, and consultancy with Inclusive Education staff relating to adjustments

for students with SLCN. Core to this role is the emphasis on collaboration with teachers.

The need for collaborative practice

Teachers at this school were, and continue to be, vocal and eager to engage in collaborative practices with the SLP to improve their classroom instruction. Many teachers at this school have expressed frustration at the minimal information they received during their pre-service training about language and the development of reading, writing and spelling. This echoes longstanding findings, first noted by Moats (1994) that teachers have limited knowledge of the orthographic nature of the English writing system (Stark et al., 2016). Speech Pathology Australia's Guideline for Speech Pathology in Education states: *'Research indicates that speech pathologists can contribute to professional learning with educators and that intense professional learning opportunities can support language and literacy processes and structures'* (Markussen-Brown et al., 2017; Snow et al., 2014; Stark et al., 2020; Starling et al., 2012 in Speech Pathology Australia, 2022, p.30).

The collaboration at this school between the SLP and teachers across all year levels has been occurring for a number of years now, with the aims of supporting improved learning outcomes for students, and increased teacher confidence. This collaboration has been characterised by a respectful understanding of teacher and SLP expertise, and a strong sense of being on the same team, a team working for the best outcomes for students.

Earlier this year the school participated in the School Improvement Review process and noted commendations included the effective use of assessment data to identify improvement targets in spelling along with the implementation of an evidence-based spelling program, and the decision to engage a speech therapist to provide training and advice for teachers implementation of the spelling program.

This collaboration... [is]... characterised by a respectful understanding of teacher and SLP expertise, and a strong sense of being on the same team

A range of language and literacy skills have been areas of focus for the SLP and the school. Two of these will be discussed in detail in this article; phonological awareness and spelling.

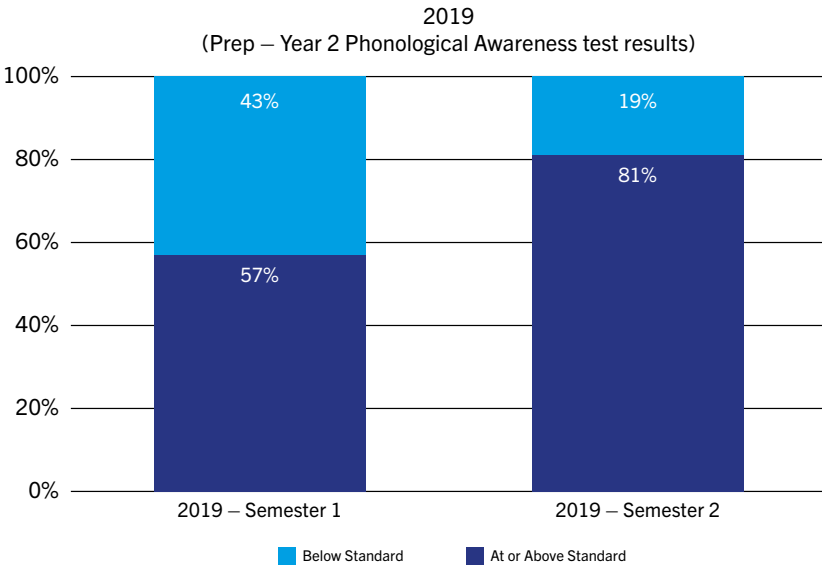
Phonological Awareness

Phonological awareness (PA) has long been recognised as a crucial cornerstone to learning to read and write, and is a strand in Scarborough's Reading Rope (Scarborough, 2001). Phonological awareness is the capacity to perceive and manipulate sound units within spoken language. It involves recognising that words consist of different sound components, such as individual phonemes and sound blends (PETAA, 2024) and, as such, it is a crucial foundation for reading and spelling development. Early PA measures can predict later literacy progress, and intervention in PA is related to improved decoding and spelling achievement, especially for 'at-risk' students (Neilson, 2016).

The school recognised that PA was an area for improvement in 2019, and that year implemented a Prep-2 PA program developed by the SLP. The aims of this program were to increase teacher capacity and confidence in teaching PA skills, as well as to ensure students were meeting PA standards within the Australian Curriculum. In 2020, this program was extended to include Year 3. This program consisted of:

- Pretesting of PA skills to provide baseline data
- PA professional development session run by SLP with Prep-Year 3 teachers
- Weekly sessions (for 6 weeks) in each class during class rotations where SLP modelled oral PA activities focused on core competencies outlined in the Phonics and Word Knowledge section of the Australian Curriculum. Teachers observed these sessions for a number of weeks, then co-delivered sessions with the SLP, and then ran a PA rotation themselves with SLP support and feedback.
- Post testing of PA skills to measure growth

The pleasing results of this initial program can be seen in Graph 1 which compares the pre-program and post-program testing results.

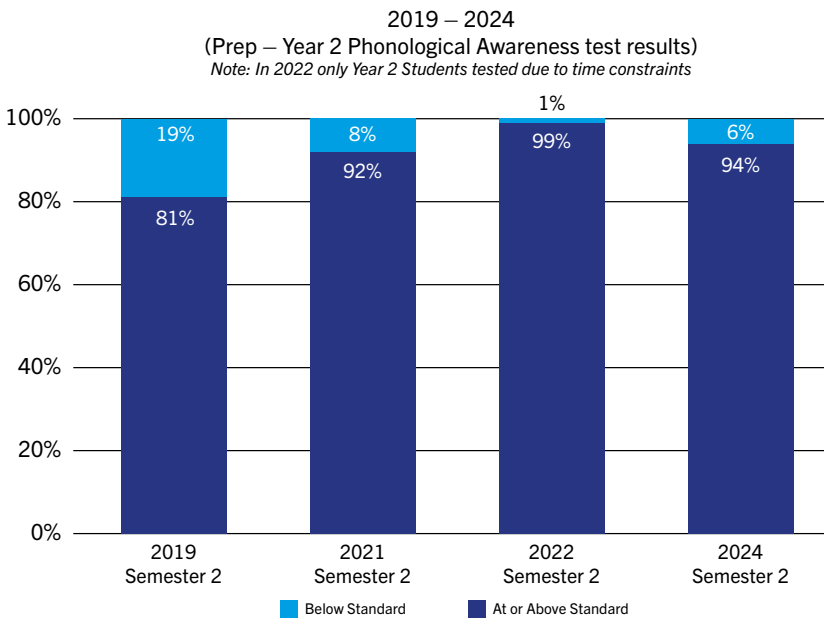


Graph 1: Pre- and post-program PA Testing Results

I hope that sharing my experience in this role will help other schools to 'think outside the square'

Since 2019, the SLP has continued to provide PA support (weekly in Semester 2 each year) in Prep (Foundation) as part of whole class rotations, as well as regular consultation with all P-Year 2 teachers about student progress in PA.

In addition, in 2020 the school implemented an explicit and systematic daily PA program, across Prep-Year 3. This was accompanied by the use of decodable readers in Prep-Year 2. PA skills across these year levels have been regularly tested since 2019 with a clear



Graph 2: Prep-2 PA Test Results

trajectory of improvement, and the maintenance of this improvement being observed across all PA skill areas. (See Graph 2).

Spelling

While the development of spelling skills tends to follow a typical pattern through early childhood (Treiman, 2017); high-quality, explicit spelling instruction is key in helping a student master English orthography and understand the morpho-phonemic nature of English. *"Phonological, orthographic, and morphological processes are involved in learning to spell from the early years of learning to write"* (Daffern, 2021, p.101). In 2022, the school identified spelling as a teaching and learning goal, based on student achievement data in spelling. The school then began writing a Prep-Year 6 Spelling program with a focus on phonology, orthography, morphology and etymology. The program was developed by the Assistant Principal – Curriculum, in consultation with the SLP and teachers.

The need for more explicit teacher training and classroom instruction in morphology was also identified. Recognition of and memory for morpheme structure supports decoding, spelling and understanding the meaning of words as vocabulary expands and reading and writing becomes fluent (Moats, 2020). Morphological awareness is associated with reading and spelling growth from Year 1 onwards, in parallel with phoneme awareness and general print knowledge (Apel et al, 2012).

The SLP developed a Morphology Scope and Sequence for the school, which was then integrated with the Prep-Year 6 Spelling program.

This school has chosen a model for the delivery of SLP services that prioritises building teacher capacity

Considerable teacher training in morphology and orthography has been delivered, with a very positive response from teachers. One teacher described her new understanding of morphology and orthography as, *'the missing piece of the puzzle for me as I teach spelling.'* Alongside this training, the SLP has partnered with teachers in Years 1-4 to deliver whole class rotations, co-teaching lessons and support in curriculum planning in the areas of spelling, orthography and morphology. Students report enthusiasm about morphology lessons across all year levels and have enjoyed learning about how spelling and morphology work together to help build words. Year 4 students have recently enjoyed telling the SLP about words they have seen/heard in the community, and how they have been able to define these words by analysing the morphemes of the words.

Teachers are reporting observations of improved spelling in classroom activities. Additionally, the percentage of Year 3 students achieving at Strong and Exceeding levels on NAPLAN Spelling testing has increased from 50% in 2023 to 68% in 2024.

The school has also started assessing Prep-Year 2 students using the COSTEY (Components of Spelling Test Early Years), and Year 3-6 students using the COST (Components of Spelling Test), with the 2024 goal being that 80% of students achieve growth on this test across the school year. Students are assessed in terms 1 and 4. The Components of Spelling is an evidence-based approach for primary and middle school classes which offers a framework that caters for diverse learners in a classroom. The program is structured around the three fundamental linguistic processes involved in Standard English spelling: i) phonological strategies; ii) orthographic strategies; and iii) morphological strategies (Daffern, 2024).

Recent term 4 testing with Year 2 students yielded very positive results, with 83% of students improved on the phonology measure, 98% of students improved on the orthography measure, and 88% of students improved on their morphology measure. These results mean that the school's learning goal has been met, and, in fact, exceeded.

Conclusion

The educational outcomes for students in the areas of PA and spelling achieved over recent years are very encouraging. Teachers were surveyed about the role and contributions of the SLP in the school at the end of 2023. Teachers rated the SLP's work very highly across all tiers and types of teacher-SLP interaction. Many teachers commented on how much they value the SLP's presence in their classrooms and as part of their planning processes. Quotes from this review include:

- *'A SLP is an IMPERATIVE member of a school community'*
- *'We believe an onsite SLP plays a pivotal role in our school community by directly supporting students, offering early intervention and developing plans to boost skills. The SLP's presence fosters improved academic performance, social interactions and student confidence while also serving as a valuable resource for teachers and parents. A data-driven approach for continuity of care and overall wellbeing.'*
- *'Extremely valuable to have accessible knowledge onsite and get timely support.'*
- *'The SLP has helped to lift key areas of curriculum (literacy)'.*

The large amount of time spent in classrooms has meant the SLP interacts with most students at the school regularly. This has allowed the early identification of potential risk indicators in students' in oral language/literacy and for timely referral of students into Tier 2/3 interventions as appropriate. The time spent in classrooms has also allowed the SLP to monitor the curriculum adjustments and progress of students with SLCN, and customise these further in real time. The SLP and the teachers have developed close working relationships, and consult regularly on curriculum and student related issues.

This school has chosen a model for the delivery of SLP services that prioritises building teacher capacity and the SLP contributing to high-quality, evidence-based classroom instruction. This model of integrated SLP service may be of interest to other schools seeking to develop effective use of SLP time with their students and staff and genuine interdisciplinary collaborations. At this school, teamwork has made the dream work!

About the author

Kerith Roby is a speech-language pathologist with 25 years of experience working with children and families in regional communities. For the last three years Kerith has worked as the onsite consultant speech-language pathologist at a regional QLD nongovernment primary school. Kerith is passionate about collaborating with educators to achieve better outcomes for students in the language and literacy domains.

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More to comprehension than strategies?

Dr Nathaniel Swain

The task of organising your literacy teaching for a given year level can be overwhelming. How do we know if we are meeting the needs of students' comprehension development as well as code-based skills? In this article, Dr Nathaniel Swain provides an excerpt from a chapter co-authored with literacy leader and speech-language pathologist Shane Pearson. The chapter is part of the book *Harnessing the science of learning: Success Stories to Kickstart Your School Improvement*, published by Routledge.

When planning how to teach or support the upper strands of Scarborough's (2001) Reading Rope, these key components may help teachers consider what to include in their comprehension work. A principle we focus on in this chapter is that students need to be apprenticed in establishing meaning from the texts they read, so nearly all our comprehension work should model this process with students.

Two major areas are explored in the comprehension section of our chapter:

1. Knowledge and vocabulary building, and
2. Text level comprehension strategies and practice.

Knowledge and language building

Vocabulary

Teaching vocabulary explicitly improves reading comprehension and writing outcomes for students. Vocabulary is best learned in context rather than as an isolated list of words. In selecting vocabulary targets, knowledge of the three tiers (Beck et al., 2013). In this book, the authors describe three different tiers of words

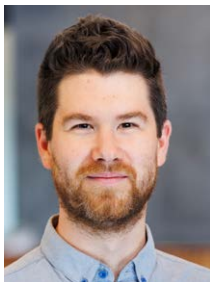
- **Tier 1 words** are found in everyday language and need not be taught explicitly unless there are concerns with English language exposure, that is when you have a high number of students speaking English as an Additional Language or Dialect (EAL/D).
- **Tier 2 words** will be best taught within English lessons from narratives or literature being studied, as well as through targeted review and application activities after their initial introduction with texts (see Beck et al., 2013).
- **Tier 3 words** are best tackled as they occur in specific content areas like science, geography, and history.

The following activities are likely to assist children in retaining new vocabulary:

- Practice pronouncing the word multiple times
- Read the printed word
- Spell the word
- Link it to morphological word families
- Encounter and read the word in multiple instances within different contexts
- Link the new word to other words that are related or distinct in meaning
- Ask students to engage in meaningful activities where they actively use words (see Beck et al., 2013)
- Systematically review newly and previously taught words

Once students learn to read, most of their new vocabulary learning occurs implicitly while reading. Teaching children how to infer meaning of unknown words in text using context is also important so that children learn to self-teach new vocabulary.

As we will review in the next section, vocabulary is best learned and remembered during knowledge building when connected to concepts and ideas being taught systematically. This is because words need to be connected to a developing schema in students' long-term memory.



Pro tip: Teach fewer words and review

It is easy to get ambitious, but with vocabulary teaching, less is indeed much, much more. In our initial vocabulary sequence at Brandon Park, we tried teaching five to ten Tier 2 words every week. Successfully reviewing that many words was difficult. Children learned target words in the moment, but often did not retain them later.

We recommend three to four specific words a week (most should come from and be reinforced within the rich texts you are reading). The important point here is that this allows for lots of review (yesterday, last week, last month, last term) to dull the effects of the forgetting curve. The **forgetting curve** is the phenomenon in which learners tend to immediately forget most of what they have learnt the previous day, with sharp declines over time, unless content is reviewed.

Knowledge-building and comprehension strategies

An under-utilised area of literacy teaching is knowledge building. Connected to vocabulary teaching, we should not just be **activating** (background) knowledge, but actively **building** (new) knowledge with students (Cabell & Hwang, 2020).

We need to think hard about how we can systematically build students' knowledge of the world and words (see chapter 9, in the book).

We want students to inquire about and critique into many areas of the curriculum, but fundamentally they should inquire from a place of knowledge. By building up students' knowledge of rich subject content, we ensure that their independent reading and investigation is fruitful.

Comprehension strategy instruction

There is strong evidence for the use of comprehension strategies (e.g., Sun et al., 2021). However, the evidence is for relatively short bursts of intervention. In many classrooms today, strategy instruction has taken over as *the* main form of instruction to embed in balanced literacy activities (e.g., reading rotations and guided reading groups). Time is limited. If we fill all our explicit teaching and practice time with the strategy of the week/month, what is being left out?

Pro tip: Introduce and explain, then model and demonstrate during actual reading

After the initial introduction of a comprehension strategy, incidental modelling and practice is the most important way to get students reading with understanding. And we need students to keep in mind what they are reading about, not just what skill they are trying to practice.

Text-level comprehension

Read-alouds, shared reading, and independent reading

What is crucial for teaching students' text-level reading comprehension? Reading language rich and knowledge-rich texts as a group. This is important, as the teacher needs to facilitate students' understanding of complex text by:

- explaining new vocabulary
- showing relationships between sentences
- completing checking for understanding tasks and
- being responsive to students' understanding in real-time.

What	*Key comprehension strategies: Inferring, Predicting, Summarising, Connecting, Monitoring Comprehension*	
Two modes	Explicit modelling and practice	Incidental teaching and practice
When	Aim for one new model a few times every term (short lesson).	Whenever you can—during read-alouds and shared reading, and independent reading.
How	• Explicit explanation, model • Guided practice on example text • (all on same or similar text/ topic).	• Model and demonstrate • Think aloud using strategy • Show how to comprehend portion of text.
Caveats	• Don't stay on the same strategy for a whole term • Don't make the focus on 'predicting' (for example) for the week/fortnight • Introduce it and then model incidentally (see right).	• Keep the focus on the actual content • The goal is to comprehend text, not to go through the motions of the strategy.

Table 1. Literacy comprehension strategies introduction and modelling.

This will allow students to begin to access more challenging and enriching texts. Over time, this propels competency in their own reading. In read-alouds, teachers can harness students' innate abilities to engross themselves in stories, and learn from the knowledge sharing of an expert reading to them.

In shared reading experiences, teachers and students take turns reading or chorally reading texts together, interspersed with checking for understanding, pair shares, discussions, and short written tasks. Practices for whole class comprehension, like in questioning the Author (QtA; Beck et al., 2020) or Reading Reconsidered (Lemov et al., 2016), provide techniques for rich engagement with text and scaffolding by the teacher and peers.

With so much to hold in mind, it's important that all those who work on student comprehension consider the multi-faceted components of this important aspect of literacy learning. Check out the full chapter for more on decoding, spelling, handwriting and fluency components of the literacy block, as well as the teaching of sentence, paragraph and text writing. We also have discussion questions and on- and off-track indicators, and rich case study examples throughout the book.

About the author

Dr Nathaniel Swain is a Teacher, Instructional Coach, and Writer. He works as a Senior Lecturer in Learning Sciences at La Trobe University School of Education and SOLAR LAB, and he produces a blog at www.nathanielswain.com. He is the winner of the 2022 Mona Tobias Award from Learning Difficulties Australia. Nathaniel has taught a range of learners in schools and universities, and founded a community of teachers committed to the Science of Learning: THINK FORWARD EDUCATORS, now 25,000 members and growing. Also check out his new podcast with Rebecca Birch, Chalk Dust.

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The Science of Reading: It's about knowledge not "Transferable Skills"

Doug Lemov

Recently, I shared an overview of the topics in the forthcoming book on reading I'm writing with Colleen Driggs and Erica Woolway: *Seven key principles of reading instruction that should inform what we do in k-12 classrooms*.

Today, I'm going to share a bit more about another of those principles, the idea that ***once students are fluent, background knowledge is the most important driver of understanding and comprehension***. A common misunderstanding about reading comprehension is that it involves transferable skills like making inferences' that once learned can be applied to other texts. Unfortunately there is little evidence that the skill translates and significant evidence that the skills happen naturally when readers have sufficient background knowledge to disambiguate texts.

One of the themes of *Middlemarch*, George Elliott's classic 19th century novel, is Mr. Casaubon's fruitless pursuit of a concept he refers to as 'the key to all mythologies.' A scholar, he imagines a single understanding that will illuminate the true meaning of every tale. He spends his life toiling at the task of finding this universal key.

It's hopeless of course. The novel reveals his delusions. When he dies, his admiring wife, Dorothea, at last reads his papers and can see that the project was absurd from the start, but the reality proved all but impossible to acknowledge *because the dream was so beautiful*. It was a 'chimera,' something so alluring the believer desperately wants it to exist even when the facts are telling him it cannot be so.

The belief in transferable skills is perhaps the most common chimera among teachers of reading. Imagine a handful of universal tools we could teach students and in so doing allow them to understand every text they read.

Who wouldn't seek out 'the key to all inferences', for example, knowing that once mastered this skill would allow them to unlock what was unspoken in every story? Or the 'key to main ideas' which would allow our students after a bit of diligent study to grasp the gist of any passage we put in front of them for the rest of their lives. Who among us would not dream such a beautiful dream?

There's no evidence that the ability to make inferences well transfers from one book to another. The opposite in fact.

The problem of course is that for all the beauty of the dream, the evidence is squarely against it. While we make inferences constantly while reading, and while doing so clearly assists with comprehension, practising strategies like making inferences doesn't help much and there's no evidence that the ability to make inferences well transfers from one book to another. The opposite in fact.

"People don't decide that they're going to make these inferences, the mind just makes them happen," Daniel Willingham (2023), writes. This is perhaps one reason why *"practice brings no benefit to reading-comprehension strategy use,."* Summarising the finding of recent studies, he writes beyond a very small amount of introduction to the idea:

Image 1. Casaubon: Well meaning but hopelessly wrong… (*Image sourced from https://www.imdb.com/title/tt1254563/*)

"There was no evidence that increasing instructional time for comprehension strategies—even by 400 percent!—brought any benefit" (Lemov, 2024).

The reason for this is that our ability to inference is a function of our prior knowledge.

Here's an example from a 3rd-grade classroom we recently visited. The class was reading Charlotte's Web when they came across this scene:

> *"But Charlotte," said Wilbur, "I'm not terrific."*
>
> *"That doesn't make a particle of difference," replied Charlotte. "Not a particle. People believe almost anything they see in print. Does anybody know how to spell terrific?"*
>
> *"I think," said the gander, "It's tee double ee double rr double rr double eye double see see see see see."*
>
> *"What kind of acrobat do you think I am?" said Charlotte in disgust.*

The teacher paused and asked why Charlotte was disgusted. Two students responded. The first said because the gander always talked too much. The second because the gander always said everything three times. Both of which are true and both of which are wrong if the goal is to explain why Charlotte was disgusted.

Perhaps students didn't understand how to infer a character's point of view from her words. This would be the assumption in a lot of classrooms and the result would be a lesson (or a series of lessons) on the 'skill' of inferencing. But the source of the problem was revealed when the teacher asked: "Who knows what an acrobat is?" There was a smattering of two or three hesitant hands. A boy who'd raised his hand responded: *"It's a little bit like a magician, I think."*

Charlotte, for those who haven't read Charlotte's Web, is disgusted because she intends to write the word in a spider web and the gander's very long spelling of the word implies lots of work hanging precariously from a web for her. But if you don't know what an acrobat is, you cannot know that. The problem was not a skill problem. Knowledge cues an inference and without it, no further explanation of how to make an inference or what an inference is will help much.

If we want students to understand and think more deeply about what they read we should focus on knowledge

That *the knowledge enables the inference* is an inconvenient fact. It means we can't just explain and practice and have students get better at inferencing. There is no Casaubon-like short cut. We instead have to go the long way around and make sure students have the background knowledge they need to make better sense of what they read.

As Dylan Wiliam, 2018, writes in *Creating the Schools Our Children Need*,

> *"The big mistake we have made in the United States is to assume that if we want students to be able to think, then our curriculum should give our students lots of practice thinking. This is a mistake because what our students need is more to think with."*

A classic study, known as The Baseball Study by Recht and Leslie, 1988, demonstrates this.

The authors divided 64 7th and 8th grade students into two groups based on their reading levels: weak readers and strong readers. But they also divided those groups again, based on whether the students knew a lot about baseball. Now they had four groups. Good readers who knew a lot about baseball; good readers who knew very little about baseball; weak readers who knew a lot about baseball; and weak readers who knew very little about baseball.

They gave them a passage to read. Here are the first few lines:

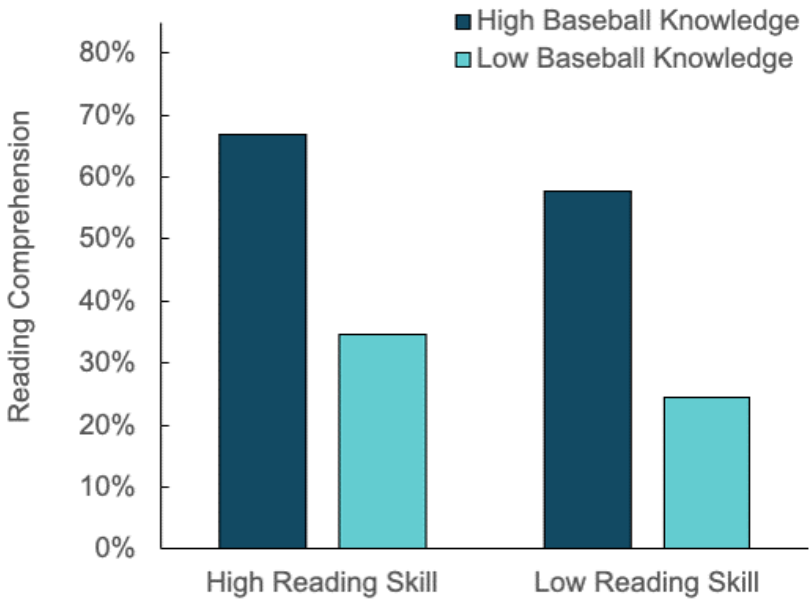
> *Churniak swings and hits a slow bouncing ball toward the shortstop. Haley comes in, fields it, and throws to first, but too late. Churniak is on first with a single…*

After students read the passage, the researchers tested the four groups of students to see how much of the passage they understood. Some of the results were exactly what you'd expect (see Graph 1).

The students with high reading ability and strong knowledge of baseball had no trouble with the passage. They got almost all of the answers correct. By contrast the weak readers with weak knowledge of baseball really struggled. They got less than half the questions right, scoring little above the level you'd expect them to get if they were merely guessing.

The surprise was in the two middle groups. The students with low reading ability but strong knowledge of baseball did better than the high ability readers with little knowledge of baseball. Quite a lot better in fact — they were a few points behind the top group and scored almost 30% better than the students who were "better" readers but knew less about the topic of the passage.

It's a study that has been repeated many times with students reading about different topics, and it demonstrates quite elegantly that you read well and successfully when and because you have background knowledge of what you are reading about. To return to Dylan



Graph 1. The Baseball Study results (Image sourced from https://www.learningscientists.org/blog/2024/9/25-1)

Wiliam's point: if we want students to understand and think more deeply about what they read we should focus on knowledge and not waste time trying to teach them abstract skills like making inferences or finding the main idea.

An author never tells you everything. If he or she did, reading would be incredibly tedious

The reason why this is the case has to do with what you might call the inherent ambiguity of every text. As Daniel Willingham recently pointed out, every sentence is to some degree ambiguous. An author never tells you everything. If he or she did, reading would be incredibly tedious and meaning making would become nearly impossible.

Here's an example. We've rewritten the previous sentence to eliminate ambiguity and ensure your accurate comprehension of our exact point regardless of background knowledge:

An author of a book, article, poem, treatise or other example of a written text in English or any other language never tells you—in this case the reader but also people like the reader who might also be reading or be imagined to be reading said text—everything that he or she intends to communicate in that text because if he or she did reading would become incredibly tedious due to the overwhelming loads of marginally relevant information jammed into the sentence in order to clarify every possible misunderstanding or gap in perception and in the end every text would read like a dense contract between two massive corporate entities seeking to eliminate any possible gray area to their transaction.

Authors by necessity always make assumptions about what readers know and assume they will fill in gaps. This is always true, even when they aren't deliberately leaving blanks and ambiguities for stylistic or artistic reasons. Understanding any text always involves "disambiguating" it.

Here's a very short text, the ambiguities of which make an interesting case study:

> *The wooden box was massive. She placed her bear on the ground. It was going to be hard to carry.*

The ambiguities are probably not even apparent to you at first because you resolved them simply and easily with inferences you didn't know you made. One ambiguity is that her "bear" is not a real bear but a teddy bear. There's no way she'd be carrying a real bear. As a result you probably inferred that "she" was a child. Another ambiguity involves resolving what noun the pronoun "it" refers to in the second sentence. Grammatically it's just as plausible for it to refer to the teddy bear as the box. But you knew that it referred to the box. It doesn't make sense for a teddy bear to be hard to carry, but a wooden box, yes. Especially for a child. You disambiguated because you had knowledge—the weights of common things; that someone with a teddy bear is probably a child—the author assumed you would have.

But what if the author assumes you know something you don't. Like in this sentence:

> *For pudding she allowed herself some cake.*

If you're a reader in England, where 'pudding' means roughly the same thing as 'dessert' does to an American, the sentence is easily disambiguated. She ordered cake after dinner. It was a small indulgence. This is implied by the phrase "she allowed herself."

But if you lack that background knowledge, the sentence is nonsensical, even if you are a very good reader.

If you want deeper thinking, if you want better reading, start by building students' knowledge.

Your working memory is busy wrestling with what seems like a riddle—for pudding she had cake? How could she have cake for pudding? Does the author mean "instead of pudding" maybe? (If you are English, imagine the sentence "for custard she had cake" to get the general sense for how an American might experience the text). You not only failed to understand the first part, you might not have even noticed or perceived the subtle implications of the word *allowed* which tells you quite a bit about the "she" in the sentence and the small indulgence which perhaps she wouldn't ordinarily consider, of permitting herself a piece of cake: perhaps she is conscious of her weight. Perhaps she is conscious of money. When your working memory is overloaded with something you don't immediately understand, your perceptiveness of other details is also degraded. Meaning is interrupted everywhere. There is no 'story' in the sentence for readers who don't have background knowledge about what 'pudding'.

Comprehension, this is to say, is knowledge-based. We make better inferences, we perceive more, we have working memory to think more deeply, when we know more about what the author assumes we know enough about. We can't do those things when we don't.

In a 2020 review of the literature, Reid and colleagues *"consistently found that higher levels of background knowledge enable children to better comprehend a text. Readers who have a strong knowledge of a particular topic, both in terms of quantity and quality of knowledge, are more able to comprehend a text than a similarly cohesive text for which they lack background knowledge. This was evident for both skilled and low skilled readers"* (Smith et al., 2021).

"Controlling for other factors, knowledge plays the largest role in comprehension. The more a reader knows about a topic, the more likely they are to successfully comprehend a text about it," literacy specialist Jennifer Walker of Youngstown State writes, again summarising the broader literature on the topic.

In fact, the connection between knowledge and all types of high-order thinking is clear, if often overlooked. *"Data from the last 30 years lead to a conclusion that is not scientifically challengeable: thinking well requires knowing facts…The very processes that teachers care about most—critical thinking processes like reasoning and problem solving [and reading!]—are intimately intertwined with factual knowledge that is in long-term memory,"* Daniel Willingham writes. *"Most people believe that thinking processes are akin to those of a calculator. A calculator has a set of procedures available (addition, multiplication, and so on) … If you learn a new thinking operation (for example, [how to make inferences]), it seems like that operation should be applicable to all [settings]. The human mind does not work that way. The critical thinking processes are tied to the background knowledge"* (Walker, 2023).

Somehow this fact does not seem to be getting through to schools. Perhaps it's the chimerical nature of skills-based instruction. We just can't let go of how

beautiful it would be if we could just give students a super-skill, a universal key and the hours we spend chasing that dream is time taken from far more productive tasks.

Again, we don't blame teachers for this. Even at the highest levels of policy, even in schools of education, the misconception prevails.

In his book *Why Knowledge Matters* E.D. Hirsch tells the story of France, which had among the best and most equitable school systems in Europe before the French replaced their knowledge-rich curriculum with a skills-intensive approach. Results declined steeply overall and gaps between rich and poor students expanded. Scotland followed suit a few years later. It *"downgraded the status of knowledge and adopted a competence-based approach, emphasising the development of transferable skills and interdisciplinary learning,"* (Sodha, 2023). The results? *"Scottish students lost an average of about 6 months progress in reading on the 2022 PISA while inequality increased. The lowest-status group fell twice as fast (a drop of 20 points) as in the highest-status group."* (Paterson, 2023). Lyndsay Paterson, a professor of education at the University of Edinburgh, observed.

You can find a thousand voices on the internet telling us to choose less knowledge and more skills, but even asking what the right balance is between skills and knowledge is the wrong question, Daisy Christodoulou has observed. It is like asking what the right balance is between ingredients and cake. The ingredients become the cake; the knowledge becomes the skill. If you want deeper thinking, if you want better reading, start by building students' knowledge. You can do quite a bit of that if you don't spend hours explaining what an inference is.

This article is an excerpt from Doug's forthcoming book with Colleen Driggs and Erica Woolway called, The Teach Like a Champion Guide to the Science of Reading., It was originally published on 13th November, 2024 on the Teach Like a Champion blog, https://teachlikeachampion.org/blog/the-science-of-reading-its-about-knowledge-not-transferable-skills/.

About the Author

Doug Lemov is the author of books on pedagogy and education. His best-known book *Teach Like a Champion* ***(now in its 3.0 edition) has been translated into more than a dozen languages. His most recent book, due out in June and written with Colleen Driggs and Erica Woolway is*** *The Teach Like a Champion Guide to the Science of Reading.* ***He is also the author of the Coach's Guide to Teaching and has worked as a result with Australian AFL, Rugby and Swimming teams and federations. You can follow him on X (twitter) (@Doug_Lemov) or read his blog at*** *teachlikeachampion.org/blog.*

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Can children be taught to comprehend what they read?

Daniel Willingham

Just how much does it help to teach children to use strategies when they read – strategies like creating a graphic organiser of the passage, or summarising as they read, or asking themselves questions and answering them?

I've just published an article in *Educational Leadership* summarising the research on this question, and I'll summarise it here.

In 2006, I argued that there was lots of evidence that comprehension strategy instruction worked, and in fact, yielded a big boost to comprehension. I was in good company—The National Reading Panel had drawn the same conclusion five years earlier.

But I also argued that there was no evidence that practice of these strategies provided any additional benefit. I based that conclusion on two meta-analyses—research that synthesises the results of different studies. Meta-analysis allows one to compare relatively brief exposure to strategy instruction (a total of, say, five hours) versus more practice with strategies (twenty hours). Both meta-analyses suggested that there was no benefit to more practice.

There's been a good deal of research since then. In my recent article, I report that the number of meta-analyses is now up to twelve, and all are in accord. Practice has no impact on the effectiveness of comprehension strategy instruction.

That observation matters for two reasons. First, and most obviously, it suggests that although it's well worth the time to teach students comprehension strategies, there's no reason to devote a lot of time to practicing them. A total of five or ten hours of instruction yields the same advantage as twenty or thirty hours.

Second, this finding suggests that strategy instruction works for a different reason than I suspect many people believe; It's tempting to think of comprehension strategy instruction as analogous to coaching in baseball. If you're a poor hitter, a coach shows you how good a hitter swings. You practice that swing and, in time, it becomes automatic and replaces the older, less effective habit. Likewise, we might think that comprehension strategies show less competent readers the way that more competent readers approach texts.

Exactly what prompts inferences in oral language or reading has been difficult to pin down

But this hypothesised "coaching" mechanism doesn't make any sense because it depends on practice, and the data indicates that practice doesn't help.

Here's an alternative interpretation. When a typically-developing child starts school they can use oral language to make inferences, connect sentences, and understand the overall gist of a message. These same mental processes are put to work to support reading comprehension. Indeed, it would be odd if the brain created specialised reading comprehension processes from scratch, rather than applying to reading the mental processes that are already in place to support oral language.

The mental processes of reading comprehension don't require or benefit from practice because children are already quite good at them when they start school.

According to this account, strategy instruction is comparable to a strategy like "check your work" in math. It doesn't improve the processes that actually do math. It's a useful way of controlling those processes.

In the same way, comprehension strategy instruction probably has no impact on the processes of comprehension per se, but it reminds students that they are supposed to coordinate meaning across sentences and paragraphs, and to get the gist of the passage; in short, it reminds them that reading is not simply a matter of decoding each word until you reach the last one.

But that's not quite the end of the story.

My description of comprehension strategy instruction could be interpreted as implying that reading instruction should end around grade four. Schooling should include phonics instruction, some work to support fluency, and then perhaps two weeks of comprehension strategy instruction. What's the point of anything else, if comprehension

can't be taught? (I hadn't thought of this implication of my account until Tim Shanahan pointed it out.)

Surely that implication can't be right. Explaining *why* calls for differentiating types of comprehension.

I've suggested that strategies prompt children to apply already-present oral language comprehension processes.

An example would be anaphora resolution, as when a listener finds the referent for "he" in "he went to church." Another example would be inferences supporting causality or explanation; seeking to understand why things happened seems to be a core aspect of cognition. And indeed, we know a four-year old has no difficulty in making causal bridging inferences in everyday conversation, as when a parent says "You seem bored. Shall we go outside?"

…seeking to understand why things happened seems to be a core aspect of cognition

Exactly what prompts inferences in oral language or reading has been difficult to pin down, and there are surely individual differences. I think it's uncontroversial that the two examples I've offered are universal; It's also uncontroversial that students are asked to do things with texts that go beyond comprehension supported by oral language processes. They learn sophisticated ways of evaluating arguments; for example, to appreciate that correlation is not equivalent to causation. They learn to evaluate the quality of writing, as when they come to understand how a good paragraph is structured. They also learn tools of analysis that are discipline-specific: why a novelist uses foreshadowing, for example, or how to interpret source information when reading historical documents.

Clearly, these skills must be taught, and there is every reason to think that they are subject to practice effects.

So, we should differentiate kinds of comprehension; Some comprehension is supported by processes initially acquired for oral language, and presumably these processes yield a fairly basic understanding of the who, what, where, why, and how of the text. Other comprehension processes offer more sophisticated analysis, and these need to be explicitly taught.

An implication of this hypothesis is that the comprehension tests used in strategy research lean heavily on the first type of process; comprehension tests demand a basic understanding, not a more complex analysis. That prediction has not been tested, so far as I know.

I've long argued for the critical importance of knowledge in reading comprehension, but knowledge isn't everything—teaching students certain types of analysis is critical as well. Understanding how each applies to instruction can help us maximise student enjoyment of and achievement in reading.

This article was originally published on 8th January, 2024 on the Daniel Willingham - Science and Education blog, http://www.danielwillingham.com/daniel-willingham-science-and-education-blog/can-children-be-taught-to-comprehend-what-they-read

About the author

Daniel Willingham is a Professor of Psychology at the University of Virginia, where he has taught since 1992. Until about 2000, his research focused solely on the brain basis of learning and memory. Today, all of his research concerns the application of cognitive psychology to K-16 education.

He is the author of several books, including the best-selling Why Don't Students Like School?, and most recently, Outsmart Your Brain. His writing on education has appeared in twenty-three languages.

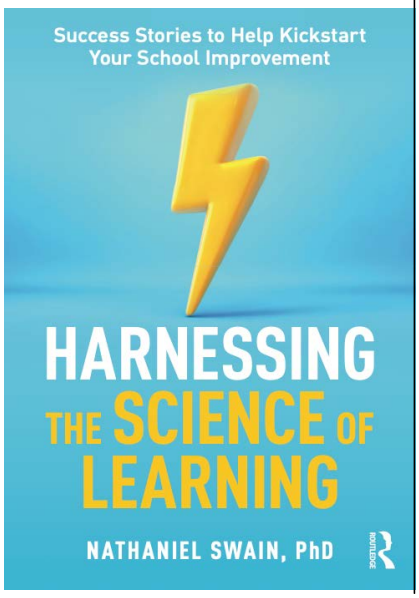
In 2017 he was appointed by President Obama to serve as a Member of the National Board for Education Sciences.

Book review: Harnessing the Science of Learning

Nath Owen

What a tremendous book for our current Edu-Renaissance! Nathaniel Swain's *Harnessing the Science of Learning* is a remarkable contribution to this space, offering school leaders, educators, and even leadership coaches a clear roadmap for implementing evidence-based practices that make a distinct difference in teaching and learning. Swain emphasises that *great teaching is about applying research in purposeful and practical ways*. By understanding how students learn best, teachers can create more effective, engaging, and evidence-based classrooms.

This new book is ripe for our times as it cleverly unpacks and brings the science of learning to the art of teaching and how educators can use these principles and success stories to kickstart school improvement. Not surprisingly this book takes the theory and applies it to the current reality of schools and classrooms. I thoroughly enjoyed reading through the many practical case studies, stimulating discussion questions and chapter summaries. Importantly, *Dr Nathaniel Swain* has synthesised the research and uses school success stories to highlight what the science of learning can look like in our schools for our students and teachers.



Teaching is an altruistic noble profession, and student success is the greatest motivator for teachers to change their practice

I envisage that this book will be extremely helpful in checking school alignment of instructional evidence-based practices in every school. *Harnessing the Science of Learning* also features many meaningful author contributions from renowned educational practitioners including Pamela Snow, Simon Breakspear, Tanya Serry, Reid Smith, Katie Roberts-Hull and Zach Groshell.

Organised in three comprehensive parts, the book takes readers on a journey of the importance of explicit instruction in our schools. Teaching is an altruistic noble profession, and student success is the greatest motivator for teachers to change their practice. *Harnessing the Science of Learning* will build knowledge and provide practical advice and the right teacher tools that have underscored the remarkable take up of explicit instruction for school improvement in Australian schools to date.

Part One: The Orientation

Chapter 1. Do we need to improve our schools? *Nathaniel Swain*

Chapter 2. Why the science of learning? *Nathaniel Swain*

Chapter 3. The science of learning lifts every learner *Nathaniel Swain*

Part Two: The Foundations

Chapter 4. Key insights from the science of learning: Cognitive load theory and beyond. *Nathaniel Swain and Zach Groshell*

Chapter 5. How can the science of learning change my teaching? Four teaching misconceptions resolved by the science. *Nathaniel Swain and Zach Groshell*

Chapter 6. What is the science of reading? What does it mean for my teaching? *Pamela Snow, Tanya Serry, Eamon Charles and Nathaniel Swain*

Chapter 7 Effective literacy teaching. *Nathaniel Swain and Shane Pearson*

Chapter 8. Effective mathematics teaching. *David Morkunas, Toni Hatten-Roberts and Nathaniel Swain*

Chapter 9. Coherent, knowledge rich curricula: Bypassing working memory by laying lots of Velcro® *Nathaniel Swain and Reid Smith*

Chapter 10. The science of learning implementation piece: Pursuing sustainable school-wide change. *Simon Breakspear, Nathaniel Swain and Katie Roberts-Hull*

Part Three: The Takeaways

Chapter 11. Kickstarting your work with the science of learning. *Nathaniel Swain*

Chapter 12. Improving your school as a science of learning leader. *Steven Capp and Nathaniel Swain*

Chapter 13. A call to action… and caution. *Nathaniel Swain*

Impressively, Swain and others demonstrate sound commitment and ability to refine and explain complex educational research into actionable insights – one of this book's greatest strengths. There is a clear avoidance of overwhelming readers with jargon, instead presenting practical strategies grounded in cognitive science that can be easily adapted to any school context. For principals and school leaders, this book is a reminder of the importance of fostering a culture of continuous learning to lead sustainable improvement efforts. In my opinion, *Harnessing the Science of Learning* will no doubt be invaluable in my role, particularly when working alongside my leadership team to critically evaluate and align our teaching and learning practice, offering a framework and to guide us to build high-performing teams and promote consistent, high-impact pedagogy.

Furthermore, I also strongly believe that what makes *Harnessing the Science of Learning* especially powerful is its hidden potential to ignite meaningful and regular dialogue among educators and leaders within schools and education systems. Reflecting on this I attempted to choose a favourite chapter, alas I found this to be too challenging a task, so I decided to bravely provide my top 3 (in no particular order).

- **Chapter 7:** Effective literacy teaching
- **Chapter 8:** Effective mathematics teaching
- **Chapter 9:** Coherent, knowledge-rich curricula

Along with the story sharing of school successes woven throughout, other huge assets I found particularly valuable were the chapter overviews, knowledge organisers and discussion questions to guide reflection and unpack chapter content. The design and flow of the book also encourages readers to easily move back-and-forth between sections as they need, allowing you to go straight to specific content chapters and then return (when ready) to the takeaway chapters in Part Three. I can easily see myself doing this multiple times when collaborating with teaching teams, school and system leaders.

When leaders guide, support and empower others, change can become smooth and appealing, thus inviting this edu-renaissance journey to be challenging, inspiring and growth-minded. This great book strongly reminded me that blazing new trails allows us to follow and enjoy the journey together. **I recommend this incredible book** for anyone who believes that the learning process isn't finished when we acquire knowledge. It's complete when we consistently apply that knowledge. You cannot predict where people will land from where they begin but with the right opportunity and motivation to learn, I believe anyone can build the right skills to achieve greater things. This is an aspirational book for the ages and should be read and shared with as many people as possible.

Harnessing the Science of Learning is a **MUST**-read for anyone serious about ensuring that ALL students receive high-quality teaching. Whether you are a school leader, teacher, education consultant or coach, this book will inspire you to think deeply about your role in driving improvement and, more importantly, give you the motivation and tools to help make it happen. I will be sharing my knowledge and understanding widely and using it as a foundation for much of my work with school leaders. Hats off to author Nathaniel Swain for leveraging the science of learning to create meaningful and lasting change in schools.

Stories change lives, Stories change minds.

About the author

I am a passionate Educator with 30 years experience in multiple Catholic school settings in Victoria. Currently, I am the Principal of St Catherine of Siena Catholic Primary School, Armstrong Creek. I believe that all learning experiences, connection and inclusion enrich life and that we must make every moment count. Gratitude and kindness spreads happiness.

I am committed to the collaborative designing and implementing a knowledge-rich curriculum, incorporating continuous school improvement with an emphasis on data analysis, research, evidence-based practices and positive school culture. Finding joy, fulfillment and energy at work is also important for me. I love to read, and I love to write about what I learn from my reading, especially about education. It is my way of sharing and transferring my knowledge to others.

I thrive on enabling the why and living the how we get things done by encouraging collective discernment, commitment and a tenacious work ethic. I am a passionately curious individual who likes to think and rethink. I enjoy asking thoughtful questions in order to foster a challenge network that allows others to flourish. I am an innovative leader, who thinks strategically about school policies communicating a clear shared vision and purpose based on the core values of collaboration and learning together. I facilitate and drive change to ensure a professional, creative and agile approach.

Course Review: Building Skilled Readers – Best Practice in Reading Instruction

Hema Desai

In March, educators from around Australia came together (either live or to watch the recordings) for an inspiring and knowledge-rich online course titled "Building Skilled Readers: Best Practice in Reading Instruction." Delivered across four powerful sessions, the course brought together leading experts and practitioners to share the latest evidence-based strategies for developing skilled, confident readers.

Whether you're an educator working in a primary or secondary setting, this course provided practical and research-driven tools to strengthen your reading instruction practice.

Session highlights

Dr Jennifer Buckingham – Evidence-based Foundations of the Science of Reading

Dr Buckingham opened the course with a compelling presentation on the scientific principles that underpin effective reading instruction. She provided an overview of the fundamental theoretical frameworks for the components and development of reading that set the scene for the subsequent presentations that connect them to evidence-based practice.

Lisa Bellman Ansell & Sarah Collins – Mastering Decoding and Word Recognition Skills

This practical session explored the explicit teaching of decoding and word recognition – foundational skills for all readers. Lisa and Sarah shared successful strategies for instruction and intervention, along with classroom examples that educators can implement immediately.

Stasha Demosthenous & Christine D'Arcy – Reducing the Reading Gap in a Secondary Setting

Addressing a critical challenge in education, Stasha and Christine focused on adolescent literacy. Their session tackled the complexities of supporting students in secondary school who have not yet mastered essential reading skills. With real-life school-based strategies, they demonstrated how targeted support can close the gap.

Melinda de Haan – Supporting Struggling Older Readers with Multicomponent Literacy Interventions

Melinda delivered a research-informed session on how to support older students through multicomponent interventions that address decoding, fluency, vocabulary, and comprehension. This session was invaluable for educators working with upper primary or secondary students with persistent reading difficulties.

Jacinta Conway – Assessing Reading Progress: Standardised, Diagnostic, and Formative Tools for Success

Assessment is key to effective instruction, and Jacinta's session provided a comprehensive overview of how to use a variety of

assessment tools to inform teaching. She clarified the purpose and power of different types of assessments and how to interpret and act on data to support student progress.

Nancy Hennessy – Language Comprehension: A Pathway to Proficient Reading

International literacy expert Nancy Hennessy explored the vital role of language comprehension in reading development. Drawing on her extensive knowledge and experience, she unpacked the elements of language that underpin deep comprehension and how teachers can foster these skills in the classroom.

Laura Glisson – From Listening to Understanding: The Keys to Comprehending Language

Laura's session rounded out the course with an engaging look at oral language as the foundation for reading comprehension. With a particular focus on vocabulary, background knowledge, and sentence comprehension; Laura brought us a range of practical strategies to use in the classroom that will support all learners, including those with language disorders.

Throughout the course, we were thrilled to see participants actively engaging in live-stream discussions. The feedback we received from participants was overwhelmingly positive, with comments such as:

> *"Thank you so much, that was a wonderful series presented by the best specialists in their fields. I gained so much from listening to them even though I have been working in the area for many years."*

> *"Loved the presentations. So much information! Excellent presenters. I really like this format."*

> *"Thanks LDA for a great series. The quality of presenters and mix of language and literacy content was excellent. Plus, there were plenty of practical take aways as well!"*

We would like to express our gratitude to our sponsors for the event:

- Phonic Books
- PLD
- Decodable Readers Australia
- Multilit

The Professional Development Committee extends its heartfelt thanks to all the speakers who have supported LDA.

Missed the Course? Watch On-Demand

If you weren't able to attend the live sessions, don't worry – all presentations are available to view via our on-demand learning shop. Tickets are still available, and registrants will receive access to the full suite of session recordings and resources.

Whether you're new to the science of reading or looking to deepen your knowledge, "Building Skilled Readers" offers a practical, evidence-informed guide to best practice in reading instruction.

Access the On-Demand Course at *https://ldaustralia.org/on-demand/*

Hema Desai
Education Manager

Hema Desai is the Education Manager for Learning Difficulties Australia. She is a Speech Pathologist and has worked in the United Kingdom and Australia specialising in working with children with literacy needs.

An LDA Consultant's story: Cristal Flood

I began my journey in education in 2002, studying early childhood education at The University of Melbourne. I had dreamt of becoming a primary school teacher ever since I was a little girl. I was thrown into fieldwork almost immediately and did rounds at a local kindergarten and two childcare centres. After completing my rounds at those three facilities, I began to question whether working in education was right for me. Was it too restrictive? What if I wanted to change careers? Would an early childhood degree hold me in good stead long term?

I made the decision to change paths and complete a degree in business, majoring in accounting. Bold move for the girl who hated maths at school! After completing my degree with the Dean's Award for Academic Excellence in Business Economics and Statistics, I worked as a tax accountant in the city. Alas, I would sit at my computer all day dreaming about being a teacher. I did not regret broadening my horizons at university, but knew with absolute conviction I was to return to studies to become a teacher.

Growing up, my mother was an adult literacy specialist who tutored students at our dining room table. My uncle ran a thriving tutoring business in Albury for decades and my sister is an assistant principal. So you could say I was following in the family tradition by returning to education.

Getting my first classroom job was the best feeling in the world but immediately I ran into my first hurdle. Where were the resources to support the attainment of reading in the early years? If, per the school planner, I were to teach the /b/ sound to Foundation, where were the books that contained the /b/ sound? At that time, schools had a huge range of levelled texts but they did not seem to align with the school's planning documents. Secondly, I continued to observe a small number of students fail to progress in their reading in my own class and others'. Why was this? We tailored our instruction to the students' needs, implemented recommendations from assessment reports, and put in place interventions we could reasonably implement in class sizes of 25 students or more. I just knew there had to be another way for these students.

After many years of encountering and struggling with the same question, *"Why do some children learn to read while others do not?"*, I began to take action. It was not a conscious choice, but a calling.

I learned about synthetic phonics which changed my perspective on teaching literacy. I commenced training in Multisensory Structured Language Education and subsequently became a member of the Australian Dyslexia Association. I learned what constitutes a Specific Learning Disability in Reading (formerly referred to as Dyslexia) and learned best teaching practices for children with learning difficulties. I also completed the Sounds~Write training.

My next big step was to put everything I had learned into practice. I decided to take a year off teaching and focus on working with children, providing Tier 3 intervention in a one-to-one capacity. I converted my spare bedroom into my teaching space. It was a transformative year – Cristal Literacy Learning Centre CLLC was born.

However, I still felt as though something was missing, so I sought advice from Alison Clarke who runs Spelfabet. She was aware of my journey thus far and encouraged me to look into Learning Difficulties Australia. This put a fire in my belly and provided me direction.

After going through the application process in 2023 to become an LDA

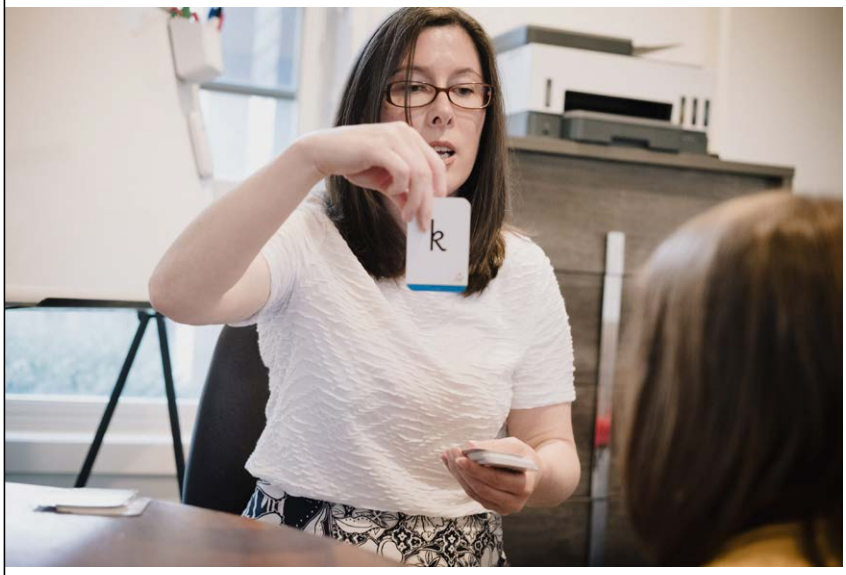


Image 1. Cristal from Cristal Literacy Learning Centre CLLC. Image by Brett Scapin, School Days Photography.

Image 2. Cristal and a student using letter-tiles to support word building and reading. Image by Brett Scapin, School Days Photography.

consultant member, I was informed that there was a next step. A 10-week mentorship program with an experienced LDA consultant, Juanita Lee. I am a learner for life, so I jumped at the opportunity!

My first impressions of Juanita were how warm she was. She was the ultimate professional with an infectious laugh and I knew it was going to be a great partnership. We devised a plan for success and went about the next 10 weeks implementing it. Juanita coached me through the entire process of assessing a new student, analysing the results to create a tailored program for the student and adjusting my approach to respond to the child's learning needs throughout the term. It was an intensive 10 weeks; a very thorough and meaningful approach to initiate a new member into the rigours of becoming a consultant member.

Underlying my approach to teaching children are the following values:

- **Compassion and care** – for the helplessness many families feel when their child has difficulty learning to read and write
- **Listening** – to what each child needs
- **Learning** – on the cutting edge of how to best teach children who struggle with Literacy
- **Celebration** – of each child's individuality and success

I feel a great sense of pride working with children who have learning difficulties. When I was a teacher in the classroom, I noticed that children who were behind their peers in reading and writing were often the hardest workers. Consequently, they would suffer exhaustion and fatigue, almost akin to burnout. Following this were feelings of anxiety and disengagement.

I honour these children's work ethic by providing rigorous individualised learning programs and a kind and caring approach to teaching. My trusted side-kick, 'Bella the Toy Fox Terrier', is often in the room while I teach. The children LOVE her and she loves them, often providing light comic relief… and a few licks.

Teaching children to read provides them the gift of dignity, especially as adults. While I teach other curriculum areas, my love for literacy is the strongest for that reason. What keeps me passionate about education, especially teaching children with a diagnosed Specific Learning Disability, is hearing stories about how Tier 3 intervention transformed someone's life, enabling them to fulfill their post-school goals, and contribute to society in meaningful ways.

I am blessed and honoured to work with families, and witness their children grow in confidence as their reading, writing and maths abilities progress. I am humbled when children 'graduate' from CLLC as they have fulfilled their goals, and thrilled when I am informed by a parent that their child, who previously never read, is now reading for pleasure. I am grateful to LDA for enabling me to transition so seamlessly from the classroom into a specialised field where I can do what I love. It is challenging and thoroughly worthwhile.

About the author

Cristal Flood is a primary school teacher of 10 years and the founder of Cristal Literacy Learning Centre CLLC (www.cllc.com.au) where she provides specialist Tier 3 intervention to children with literacy difficulties. Cristal is trained in Multisensory Structured Language Education and Sounds~Write, and is a member of the Australian Dyslexia Association and a Consultant Member of Learning Difficulties Australia.

Conflict of interest

The author is the founder of a business mentioned in this article, and receives financial benefits related to this work. Copyrighted images have been reproduced with permission. The author did not receive funding from public, commercial, or not-for-profit sectors to write this piece.

Image 3. Cristal and a student reading a decodable text. Image by Brett Scapin, School Days Photography.

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