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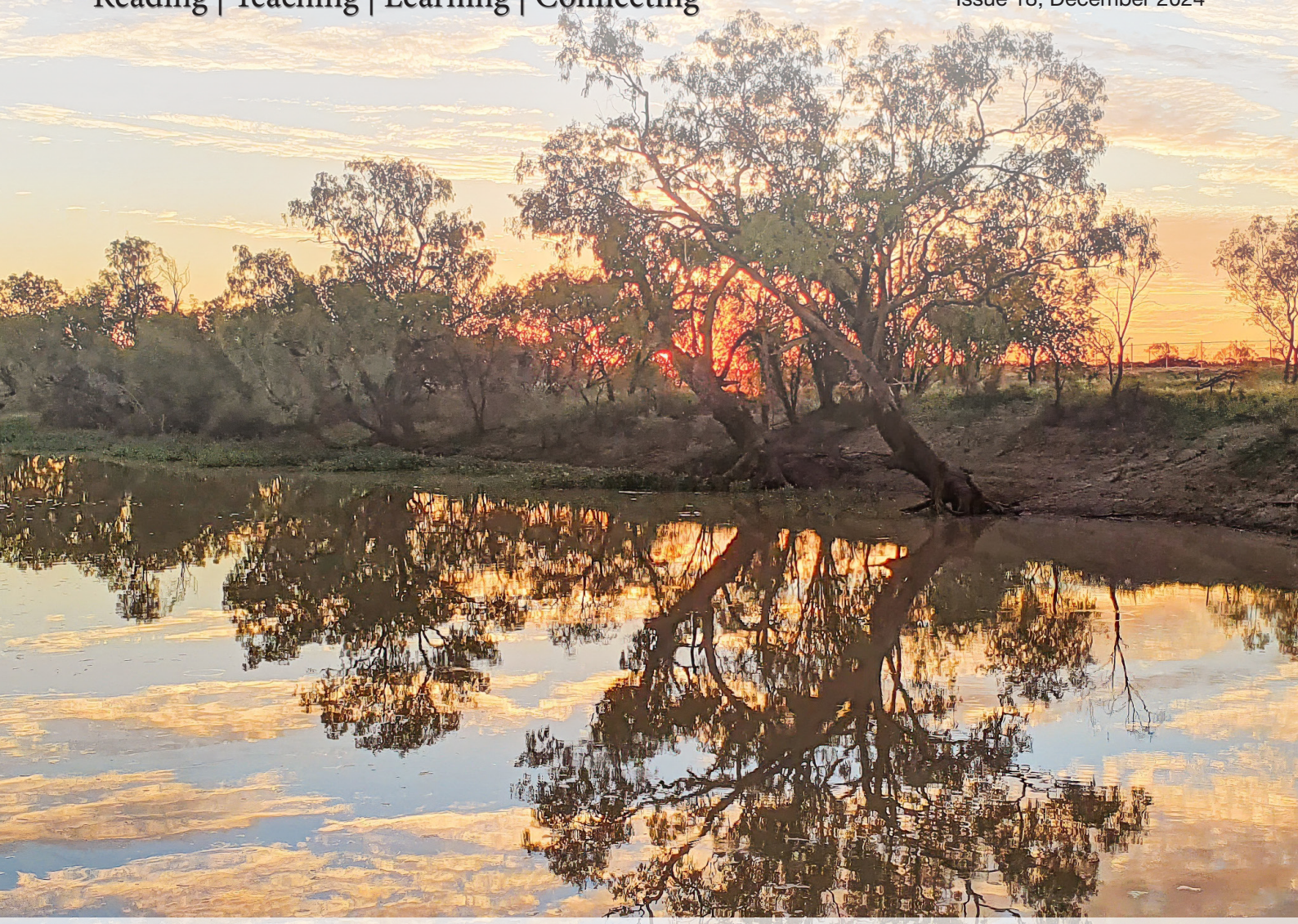
Nomanis

Reading | Teaching | Learning | Connecting

Issue 18, December 2024



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The sound of MUSEC

Kevin Wheldall

Robyn Wheldall

In 2025, we will be celebrating 30 years of MultiLit. The 'Making Up Lost Time In Literacy' Initiative, or MULTILIT for short, was established in 1995 by Kevin Wheldall who was then Professor of Education at Macquarie University and the Director of its Special Education Centre (MUSEC). MUSEC was MultiLit's academic home. When Kevin arrived in Australia as its second Director in 1990, there was already a strong tradition of behaviourally oriented research into the teaching of academic skills. Coupled with Kevin's own work in this area in the UK, MUSEC continued to be a centre at the forefront of effective instruction. What began as a research and development initiative has grown and endured beyond our expectations in the mid-1990s. As we look towards our anniversary year, it is a good time to reflect on from where we have come and to honour those who came before us in the tradition of the science of learning and evidence-based instruction.

Macquarie University Special Education Centre (MUSEC) was founded in 1975, with (the late) Professor Jim Ward as its first Director. Jim was a leading figure in British educational psychology prior to his appointment to Macquarie and was the first to publish articles on an operant, applied behaviour analysis (ABA) approach to classroom behaviour management in the UK. In a history of Macquarie University, Jim Ward was described as "one of the more original and creative spirits from Macquarie's first twenty-five years. Voluble and articulate in a blunt north country way (he was a Yorkshire-man), emotional but intellectually demanding, he relished academic life of the enterprising and vigorous kind." (Robyn can attest to this. She was privileged to have her first office at Macquarie located next to Jim's.) When it was time for Jim to retire, they looked around for a like-minded educational psychologist who could carry on the early work of the Special Education Centre at Macquarie University and Kevin was appointed, coming from a role as the Director of the Centre for Child Study at the University of Birmingham.

In this editorial, we would like to pay tribute to the early work of the evidence-based special educators of what was to become MUSEC. We would like to see public recognition of the early work of Alex Maggs, Greg Hotchkis, Bernie Thorley, Sue Bracey, Margaret Goninan, Moira Pieterse and other pioneers. When the Special Education Centre was established as part of an initiative of the Australian Universities Commission, the focus was on practical solutions and helping to remove the divide between special and regular education. The Centre developed a rigorous postgraduate degree program to develop special education leaders who could inform classroom practice and support regular teachers who were educating a range of students. A special school was also established as part of the Centre so that research and teaching could take place to advance the purpose of the Centre and to produce practical solutions.

In our view, Dr Alex Maggs deserves a special mention. Maggs was appointed as the Centre's Assistant Director in late 1975 and had a particular interest in precision teaching (data-based instruction) and direct instruction. In 1982, he published an article with Megan Lockery in *Educational Psychology* titled 'Direct Instruction Research in Australia: a ten-year analysis'. (There is a nice connection here, as Kevin was a founding editor of *Educational Psychology* from the University of Birmingham at that time.) The article drew attention to the fact that research in the US into Direct Instruction programs had been carried out since the 1970s, showing that they were the most effective in teaching academic skills to a range of populations in different settings. Maggs had been leading his own research program in Australia in Direct Instruction since the early 1970s. He did much to advance the knowledge of the remarkable (but ignored) results of Project Follow Through

in the US and he promoted Direct Instruction and behavioural approaches to teaching more generally. In 1976, Maggs was consultant to the House of Representatives Report into Children's Learning Difficulties. As noted in the MUSEC 2000 Retrospective, "Through his personal research, Dr Maggs had a pioneering influence on the use of direct instructional techniques in regular schools and was among the first to explore the use of computers in individualised instruction." Magg's colleagues also did ground-breaking work in the area of effective instruction for young children with Down Syndrome, led by Moira Pieterse. The early intervention program at Macquarie became a model of best practice and internationally acclaimed.

Our dear friend and eminent early interventionist, Dr Coral Kemp OAM (who returned to the Centre in 1991) was in the first intake into the Master of Arts in Special Education in 1975, taught primarily by Bernie Thorley and Greg Hotchkis. She writes:

> *There were not many of us (fewer than 15 from memory) and most had been given scholarships from the NSW Department of Education with the idea that they would become special education consultants. We covered Applied Behaviour Analysis, direct instruction, precision teaching, task analysis, match to sample and small 'n' research (the research for my Master's project was a multiple baseline study). We were also looking at the research on literacy and numeracy. Sue Bracey did the course at the same time as me and Margaret Goninan was doing her Master's honours in special education at that time. Moira Pieterse got the Down Syndrome program started with support from Bernie Thorley, so we could see a lot of the strategies we were being taught in practice.*

Of course, further research and development of theory has continued and colleagues from MUSEC over the years have added much to this. Kevin and Dr Mark Carter (who came to the Centre in 1991) continued to uphold the principles of applied behaviour analysis.

> *In 2000, applied behaviour analysis is still alive and well at MUSEC. But it is a different ABA from that practised in the early days of MUSEC. To use Wheldall and Carter's terminology from the title of their position paper, MUSEC has been 'reconstructing behaviour analysis in education' to reflect more fully conceptual advances over the past twenty years or so.*

It is heartening to see that the principles of direct and explicit instruction have made their way into the contemporary education scene and are increasingly being widely deployed in classrooms in Australia to good effect.

It is heartening to see that the principles of direct and explicit instruction have made their way into the contemporary education scene and are increasingly being widely deployed in classrooms in Australia to good effect. The appetite for the science of learning has certainly grown and we pay tribute to all those who are currently spreading the word about effective instruction. But let us not forget those on whose shoulders we have stood as we advance evidence-based teaching. These early pioneers were brave, often criticised and misunderstood. They were working in an era where constructivism was well and truly taking hold and became the prevailing zeitgeist. We owe much to these folk as we promote the cause of the science of teaching and learning. As we celebrate MultiLit's 30th anniversary in 2025, we are grateful for the work that has gone on before and for those pioneers whose messages of effective instruction are now being heard.

Emeritus Professor Kevin Wheldall AM
and Dr Robyn Wheldall
Joint Editors

What we've been reading

Sarah Arakelian

I recently learned of a new way to get books at my local library through an app which allows you to obtain ebooks and audiobooks via any device. This is another great way to get library books, though I quickly discovered some pitfalls. I borrowed *The Thorn Birds* by Colleen McCollough, which was available at the time and recommended to me. It was perhaps not the best idea to borrow such a lengthy book when my reading time is limited by family and work, but I enjoy historical fiction and have particularly been liking those set during the world wars. I had to renew the loan several times, sometimes having to wait for others who had requested it, and still only read about 90% before my final loan was up and the book was no longer available at my library. I enjoyed what I was able to read and hope to finish it soon.

I recently read *The Cliffs* by J Courtney Sullivan, more historical fiction with a little fantasy and themes of feminism, relationships and addiction. This book appealed to the ghost story lover in me. The story is mainly told from the perspective of a woman whose whole life has been torn apart by her alcoholism. She returns to her roots and goes on a journey of discovery about a Victorian house in her home town in Maine that she was inexplicably drawn to in her youth. The new owners of the house made considerable renovations and in doing so disturbed the house, bringing to light some of the trauma experienced by the women who lived there. With some chapters told from the perspective of these historical women, the audience discovers links between events that occurred at the house before the protagonist, making it hard to put down in case she never made the connections.

I have finally learned to love a good audiobook on the work commute and now seemingly can't do without them. It took a bit of practice, learning to lose myself in the story while still concentrating on driving, but I find myself no longer rushing, hoping to get a little further through whatever story I'm listening to. I greatly enjoyed *Lessons in Chemistry* by Bonnie Garmus, previously reviewed by Anna Desjardins, and *The Hotel Avocado* by Bob Mortimer. The latter is a comical weaving together of the different characters' versions of events in the lead up to a trial in which the protagonist, Gary, will provide evidence against crooked cops. The characters end up on the wrong side of the villains' hired guns and fight, literally and with their morals, to make it to the trial. The audiobook I listened to was read by a different voice actor for each character – including Mortimer as the narrator who kept popping in to give his two cents. One voice actor even skilfully adapted his style to include distinct voices for Gary's friends, the squirrel and the pigeon. I'm sure other commuters thought me crazy as I cackled away in my car.

Gabrielle Brawn

My recent reading activity has been inspired by suggestions in this *Guardian* article: The experts: librarians on 20 easy, enjoyable ways to read more brilliant books, shared by Kevin. The first piece of advice I followed was joining my local library (Recommendation 3: Join a library). In fact, as I live on the boundary of two council areas, I took the opportunity to join two libraries! And it is true, there is so much more than books at local libraries these days. They are true treasure troves offering everything from audiobooks to ebooks to movies to events like meet the author evenings – accompanied by a glass of wine! I even borrowed a thermal imaging camera. The library app allows me to effortlessly reserve books with a simple tap, and I can then pick them up when notified they are ready. What service!

For my initial borrowings, I selected two nonfiction titles (Recommendation 9: Consider nonfiction): *Life Admin Hacks: The Step-by-Step Guide to Saving Time and Money, Reducing the Mental Load, Streamlining Your Life* by Mia Northrop and Dinah Rowe-Roberts (the best hack for me was to use an app to keep track of birthdays and gifts) and *My Efficient Electric Home Handbook: How to Slash Your Energy Bills, Protect Your Health and Save the Planet* by Tim Forcey (hence, the

thermal camera to assess my home's 'thermal envelope'). Neither book demanded deep reading; instead, they offered practical tips which now populate my growing to-do list!

In preparation for attending the Sydney Writers' Festival where I had tickets to see Sam Neill interview Bryan Brown about his new book *The Drowning*, I downloaded the ebook to my Kindle (Recommendation 16: ebook or print). Unfortunately, I couldn't finish this book (perhaps the bargain price of $4.99 should have been a clue). While Bryan Brown's unmistakable Aussie 'voice' shone through, I found the repeated use of very short sentences and the storyline to be very uninspiring. Despite this, I enjoyed the Writers' Festival event, and I appreciated the obvious warmth, humour and friendship shared between Sam Neill and Bryan Brown and I reflected on how much I enjoy Sam Neill's voice. This inspired me to listen to his memoir *Did I Ever Tell You This?* (Recommendation 2: Listen to a book rather than 'read') narrated by Sam Neill. While there can be debate about whether listening to audiobooks constitutes reading (the MRU likes the term 'ear reading'), I find that hearing interesting life stories enhances my commute to work. I enjoyed learning more about Sam Neill's life and career and his experience with cancer.

Following this, I listened to Henry Winkler (aka 'the Fonz' from the TV show *Happy Days*) narrate his memoir *Being Henry: The Fonz … and Beyond*. Many of you reading this are probably too young to remember *Happy Days*, but the Fonzie character was the cool, super confident, motorcycle-riding star of the show. In real life, Henry Winkler appears to have faced lifelong struggles with anxiety, often fearing he would never work again – perhaps an experience common among actors. I was interested to hear his experience of growing up with undiagnosed dyslexia, recounting that he couldn't read, spell or do basic arithmetic. He was eventually diagnosed as severely dyslexic at the age of 34. It was both moving and tragic to hear him recall being called 'dumahhunt' (dumb dog) by his German parents. His experiences later inspired him to co-author a children's book series about a 4th grade boy, Hank Zipzer, who had similar learning challenges.

Finally, I returned to a favourite: Louise Penny's Inspector Gamache crime fiction series, specifically *A Rule Against Murder* (Recommendation 7: Read what you love). Armand Gamache is a wonderful character: thoughtful, compassionate, decent and kind, with a love of literature, poetry and philosophy. The character was inspired by Penny's late husband, Dr Michael Whitehead. This one ended up being a real page turner as I was racing through at the end to find out 'whodunit'. So I plan to return again to Inspector Gamache and the characters from the fictional village of Three Pines.

Mark Carter

My recent reading has continued the natural history theme. A recent book was Steve Brusatte's *The Rise and Reign of Mammals*. As expected, Brusatte illustrated the remarkable diversity of mammals, from the tiniest bats to the enigmatic mega-fauna of the last ice age, including the unquestionably uber-cuddly, three-ton wombat, to the most dangerous predator in history, the big-brained Homo sapiens. More interesting was illumination of why this diversity exists. Mammals and their predecessors survived multiple extinction events, and the key issue addressed in the book was what made them so successful and adaptable? Many of the answers turned out to be not what I thought.

For example, mammals were diminutive creatures for much of history, generally mouse to rat sized. They co-existed with the dinosaurs for 100 million odd years and the largest mammal was little more than a badger-sized snack. Being small turned out to be a superpower, allowing many mammals to ride out the asteroid extinction, which appears to have polished off most of the dinosaurs, and then evolve into the wide variety of critters that are familiar. Another surprising key to the adaptability of mammals turned out to be their variety of teeth and, in particular, the ability to chew. This allowed food to be predigested and offered access to a greater variety of munchies. Have you ever wondered why you seem to have a never-ending series of expensive dental visits – why can't you just grow new teeth, like nails and hair? Turns out, you can blame your ancestors, because chewing requires precisely aligned teeth, which would be impossible if they kept being replaced. So, you only get one set of adult teeth – and my dentist can continue to look forward to his annual European vacation.

The Rise and Reign of Mammals was an interesting read although, on the negative side, the author continually refers to the brilliantly adapted monotremes, such as the platypus and echidna, as "primitive" mammals. Placentalist hegemony aside, a worthwhile read.

Sapiens: A Brief History of Humankind by Yuval Noah Harari had possibly the worst opening of any book I have ever read, beginning with a description of the big bang of all things! Talk about taking starting from the beginning to extremes. I almost stopped at that point but, being a cheapskate and having already put my dollar down, decided to persist. I'm glad I did as it turned out to be exactly the sort of book I like, one that challenges my preconceptions, even the ones I did not know I had.

At a recent visit to my GP, I commented that some research I had found on the internet suggested a minor medical ailment was related to vestiges of Neanderthal DNA, perhaps accounting for my brutish charm? Without hesitation and mustering his best bedside manner, my GP added it might also explain the grunting and knuckle dragging! As it turns out, both of our preconceptions of Neanderthals were profoundly incorrect. While they were robust and cold adapted, Neanderthals lived in social groups, made tools, had sophisticated culture, cared for the disabled and infirmed and, in fact, had larger brains than modern day humans. Certainly not mindless brutes and I am proud to retain some of their DNA.

Harari presents many challenging propositions, such as the average quality of life of humans decreased with the agricultural revolution and, in a very real sense, wheat domesticated humans, rather than vice versa. Perhaps the most interesting was the argument that our capacity to cooperate in large groups, essential to our success as a species, is dependent on our cognitive capacity to believe in abstract 'myths' such as nations, laws, money, soccer and limited liability companies. For example, I work for MultiLit. MultiLit is not the aggregation of desks, chairs, computers or even people and programs. Rather it is an imaginary, notional entity, which exists because many people elect to accept (believe in) the abstract legal provisions that make it exist. This entity certainly does assist a group of individuals to cooperate and work towards a worthy common goal, but, in some sense, it is no more than a consensually shared delusion. Perhaps this is not a line of argument I should press with the company directors?

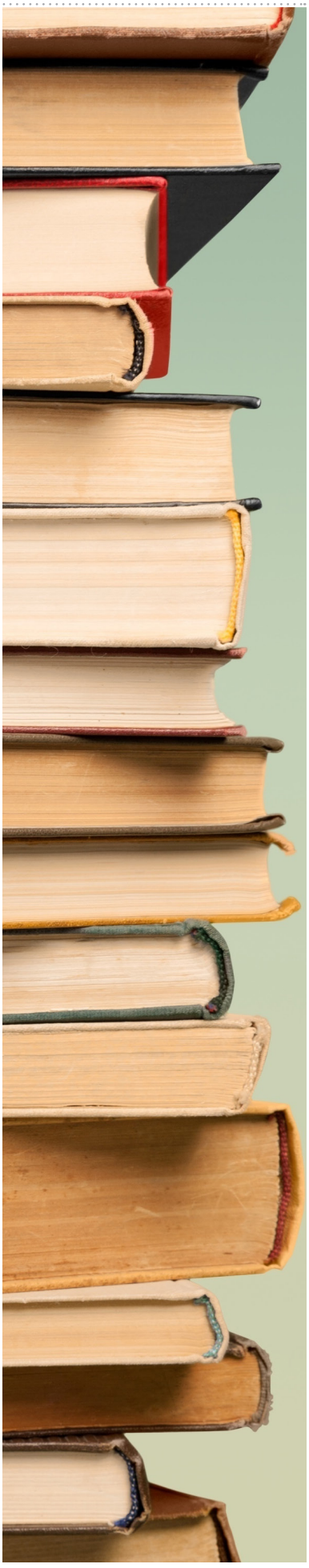
Harari acknowledges that some of the propositions presented in the book are subject to academic controversy, which may well be an understatement, and I would be inclined to withhold judgement on many without further evidence. Nevertheless, they certainly challenged some of my preconceptions and biases – and that is usually a good thing.

Anna Desjardins

Feeling recovered from reading the heavy-going *Demon Copperhead* (reviewed last time), I blithely launched into *Boy Swallows Universe* by Trent Dalton to kick off the second half of my year. The series of the same name was being recommended to me from all quarters, and I didn't want to watch it before having read the book. Wow! I can certainly see why it has been a bestseller. Although having now read it, I feel no desire to also see the story on the screen. Experiencing it on the page was vivid enough – a raw and real picture of Australian suburban life in the 80s for a family on society's frayed edges. The unlikely young hero, Eli, is a delight and if you like magic realism, which I do, this book performs a masterful highwire balancing act between truth, dream and perhaps a little of something beyond either.

Other great reads over the last six months have been *The Glassmaker* by Tracy Chevalier and *Americanah* by Chimamanda Ngozi Adichie, both authors I've enjoyed before. Chevalier plays with time across 400 years of Venice's glass-making history in her novel, following the fate of a single family who somehow live through it all. If you are willing to make the leap with her, it's a rich and fascinating look at a mythic city and its heavily controlled artisan guilds, making it a ruling trade centre for centuries. I loved the Italianness of it all, I learned a lot about glasswork and beadmaking, and the central character's loves and losses provided an effective through-line to the narrative.

Adichie's novel, on the other hand, could not have been more firmly grounded in reality. As in all of Adichie's work, she explores life during Nigeria's troubled recent history, and in this case, the experience of Nigerian immigrants living in the US and the UK, who find themselves (like immigrants anywhere) in a no-man's land somewhere between the culture of their birth and the culture of their adopted country.



The book acts as an important commentary from the inside on how race and identity are intertwined in nuanced ways in the different contexts of America and Nigeria. I did find myself sighing a bit towards the middle of the story at the constant critical eye that Adichie had her protagonist turn on every character flitting across her pages – every person observed in a café, or on a street corner, or at a social gathering. It made me wonder what she would make of me if she saw me out somewhere! But the story does eventually redress this imbalance, which was a relief.

Less successful in the 'books I picked up because I like the author' category was *Moonlight Market* by Joanne Harris. I feel like this book got published solely because of the name Harris has made for herself with *Chocolat* and her subsequent novels. Even for a self-confessed magic realism fan, this one did not get the balance right. Like its shape-shifting 'lepidopteran' heros and heroines, it felt too flitter-flighty, with a lot of repetitive padding.

On a more serious bent, I delved into *The Language Game* by Morten H. Christiansen and Nick Chater. This book is a little like the mirror book to the *The Language Instinct* by Stephen Pinker, and the echo in the titles is not insignificant. In *The Language Instinct*, Pinker examines language acquisition processes that lead us to hypothesise that the grammars of the world's languages are constrained by our brain architecture, and that children therefore come to the task of acquiring language with innate biases that help them during this monumental learning feat. In *The Language Game*, Christiansen and Chater argue that the evidence we have now points to a different possibility for how language acquisition proceeds; one in which children experiment with imitated chunks, slowly building up a system to achieve communicative goals, from which grammar falls out as a kind of accident. It was thought-provoking to dip into this debate again and update my knowledge on where things sit currently.

Most fascinating for me was the presentation of work that is being done on spontaneous order by complexity theorists (scientists who study complex systems which can range from how molten lava cools to how the global economy functions). These theorists look at how small local interactions can lead to unexpected global patterns across an entire system. Christiansen and Chater argue that the same principles can explain how complex human grammars evolved, and they propose that this system must develop from scratch every time a child learns language.

This book inspired me to think more about these issues – but ultimately, I don't think the two views need to be pitched as at odds with one another. Perhaps they are complementary (a little like the two sides of the speech-to-print and print-to-speech debate). Could it not be that complexity theory will allow us to understand how language evolved and therefore why children do seem to bring certain observed biases to the language acquisition process?

To finish with something lighter I'll leave you with some 'ear-reading' news, as I am at long last getting on this podcast bandwagon thing! I have been enjoying exploring *The New Yorker Fiction* podcast (thanks to an Annabel Crabb recommendation). In each episode, the magazine's fiction editor, Deborah Treisman, has an insightful conversation with an author, who she has invited to read and discuss another author's short story with her. I've discovered some interesting new names and stories (such as *Haunting Olivia* by Karen Russel, *Love Letter* by George Saunders and *Every Night for a Thousand Years* by Chris Adrian). I've also found hearing US creatives' thoughts and feelings in the current political context to be a refreshing way to tap into world news. And I just love Deborah – she is wry, measured and thoughtful, and she's great at keeping her interviewee on track. The principle of the podcast can lead to some less successful episodes, as not every author is also a great reader, but I've found it generally to be more hit than miss.

Maddy Goto

My book consumption over the past few months has taken me on quite a journey – from the unruly classrooms of English secondary schools to the rolling hills of the Oxfordshire countryside, to colonial India, over to New Zealand and then back to Europe. Tom Bennett's *Running the Room* aside, where strategies to regain control of unruly classrooms are the same wherever you are, the concept of place and all that it represents featured prominently in each of the other books I read.

While it is often the characters that tell the stories, places tell stories too. I don't think the authors probably intended for the settings of their novels to have such an impact on their reader, but after reading Clover Stroud's *The Giant on the Skyline* I've thought about 'place' in a slightly different way.

The Giant on the Skyline was the second memoir I've read by Stroud. In this one, she writes of home, of belonging, of community, of family, all of which are deeply rooted in her physical surroundings. There is a narrative of sorts, but it is the way in which she notices, captures and describes the detail of things that are so easy to overlook (like the intricacies of a hedgerow or the movement of a waterway) that makes you slow down, ponder and marvel. *The Giant on the Skyline* taught me a lot about the history of the enduring landscape of this particular part of Oxfordshire and how it shaped the people who have lived there over millennia. I love Stroud's writing style – she writes from her soul, in a visceral yet colourful prose.

From Oxfordshire, I journeyed to India and the sweeping saga of *The Covenant of Water* by Abraham Verghese. Spanning three generations, I found this one too long and struggled to get to the end. I think I was more interested in what it could teach me about this part of India's history that I found the narrative distracting. Perhaps it just didn't grab me and therefore took me too long to read, resulting in me simply 'losing the plot', so to speak!

I had read some great reviews of *Auē* by Becky Manawatu, and having read very little by authors from New Zealand, decided to give it a go. I bought this one on my Kindle. It chops and changes between different viewpoints and characters, placed differently in time, which sometimes made the narrative a bit difficult to follow. Manawatu writes with an urgency, however, that doesn't give you time to dwell but pushes you on. *Auē* tackles some confronting themes – domestic violence, gang violence, drug abuse, orphaned children – and is achingly sad at times. Māori words are used frequently throughout the text, and while the meaning of some could be inferred, others simply left me guessing (and a bit frustrated). It wasn't until I reached the end of the book that I realised there was a glossary – something I would have known about from the beginning (and referred to often) if I'd had the paper version in my hands!

I needed something light after the relative heaviness of *Auē* and opted for *The Lost Bookshop* by Evie Woods. Magical realism isn't my usual go-to, but I enjoyed the speed with which I turned the pages of this one, getting lost in the streets of Dublin and carried along by the story. I didn't particularly like the writing style but for an easy read, it served the purpose!

Alison Madelaine

This year, I have reviewed two more ARCs (Advanced Reader Copies). *All the Colours of the Dark* by Chris Whitaker is an absolutely epic story beginning in the 1970s and spanning decades. Set in small town USA, we are following friends Joseph (Patch) and Saint. Something happens that puts strain on their friendship, and the rest of the story follows their lives, both individually and together. It is hard to categorise this book. It is a coming-of-age story, a mystery, a serial killer thriller, and a story of friendship, love and determination all rolled into one. The other ARC was by the author of the popular *Harry Bosch* and *Lincoln Lawyer* book series (the TV adaptations are also excellent, and I have recently binged *The Lincoln Lawyer* Season 3 on Netflix). *The Waiting* is about a lesser-known character in the *Harry Bosch* Universe, Renee Ballard. One of the most interesting things about this story was the use of genealogy in solving crimes, for example, identifying genetic relatives and building family trees in order to help narrow down suspects in a case.

If there are any fans of Australian author Craig Silvey out there, I recently got to meet him and he signed my son's copy of *Runt*, which I have also recently read. If anyone is looking for a great children's book that appeals to adults too, *Runt* is it. Craig also revealed that he is currently writing a second instalment!

My list of fiction translated from Japanese is growing, and this time I read *Convenience Store Woman* by Sayaka Murata (translated by Ginny Tapley Takemori). This is a very short, quirky book and I devoured it in one sitting. Another very good read was from the queen of short books, Clare Keegan. *So Late in the Day* is about the

relationship between a man and a woman and what might have been. As always, Clare Keegan manages to pack a lot into a novella.

Recently I did two long road trips and listened to a few good audiobooks. One was *A Gentleman in Moscow* by Amor Towles. While I did not love this as much as many others have, I did enjoy it once I got into it. The other was Liane Moriarty's latest book, *Here One Moment*. This was a very interesting read. A woman on a plane stands up and points to each of the passengers 'predicting' their age and manner of death. Most of the passengers are convinced she is some sort of fortune teller, and some of them set about trying to thwart her prediction. This book explores the question of whether you live your life differently if you know how and when you are going to die. I will not spoil the book by telling you whether these predictions came true or not – you will have to read it to find out!

Ying Sng

When *The Poisonwood Bible* by Barbara Kingsolver was published last century, I started reading it but didn't finish for one reason or another. It must have made an impression on me because every time I heard the book title or saw the author's name, an image of a girl in a small plane would appear in my mind. No context. It would just show up. Well, I can tell you where it was from now! As big books go, this one is a cracker. I really enjoyed the characters, loathsome and lovable as some of them were. After I turned the last page and closed the book, I sent a text to a friend to rave about it – "I've just finished this book. Let me tell you about it!" Of course, she had read it years ago – you know, way back when I should have.

Another book I enjoyed was *The Women* by Kristin Hannah. The central character is Frankie, a young woman from a well-to-do conservative family in California. Her parents revered military service but when she joins the Army Nursing Corp during the Vietnam War, they are aghast. The expectation is for her to have a suitable marriage; war is something best left to men. The twenty-year-old Frankie is frightfully unprepared for life in a warzone but eventually she finds support from her colleagues and purpose in her work. When she returns home, Frankie struggles with forming relationships, substance addiction and what we would now call post-traumatic stress disorder. There was no support for women because they were not on the front line. I guess the horrors of dealing with mass casualties from grenades and napalm wasn't front line enough. The 1960s was a period of change and Frankie's experience brought a sense of the political and cultural zeitgeist. There were also light-hearted moments and some romance, after all Frankie was a young woman in a male-dominated setting. However, my favourite part was the thread of friendship that ran throughout the book. Bonds that are forged through joint turmoil are unbreakable and in Frankie's case, lifesaving.

The House of Doors by Tan Twan Eng is set in colonial Malaya and weaves real historical events with fictional characters. A quote on the cover calls it "richly atmospheric" and it is difficult to find two better words to describe it. The protagonist, Lesley Hamlyn, lives in Penang with her husband who went to school with Somerset Maugham. The renown writer and his secretary/companion, Gerald, come to stay with them and during this visit Lesley recounts many stories from her past. These included how they were acquainted with the would be revolutionary, Dr Sun Yat Sen, when he lived in Penang and devised plans to overthrow the Qing dynasty and the murder trial of Lesley's best friend, Ethel Proudlock (the first white woman charged with murder in Malaya). Ethel's story was included in Maugham's *The Casuarina Tree* and later turned into a successful play. Tan Twan Eng has written three books and considering all three have been on the Booker longlist, he isn't too shabby a writer. His other two books are now on my precariously tall to-be-read pile.

By chance, I seem to have read a few books of historical fiction. Next time, I may endeavour to read some nonfiction and perhaps some books with titles that don't begin with 'The'.

Note: For reasons of space, we have had to hold over contributions from the editors until the next issue.

What does brain science have to say about teaching reading? Does it matter?

Tim Shanahan

Teacher question:
I am the principal of a small primary grade school (350 students). I want to hire a consultant/professional development specialist who could school my faculty in brain science so they will be able to teach reading more effectively. We all earned our credentials in colleges of education so none of us know these new brain-based methods of teaching reading. Could you please provide some guidance?

Shanahan responds:
It may be hard to believe given news media reports and the numerous books that now purport to translate neuroscience into pedagogy, but there are not any new and effective instructional methods, approaches, techniques or materials that have been developed based on 'brain science'.

Save your money. Invest in something more certain to help your school – like buying lottery tickets.

When people are talking about 'teaching the brain to read', they are typically touting phonics instruction. You know, phonics, an instructional method developed in the early 19th century. Not exactly the spawn of modern neuroscience.

Teaching phonics is teaching the brain.

But then so is teaching word memorisation.

I don't mean to be cavalier here – I do understand that neurologists have identified some provocative distinctions between decoding and word memorisation (we'll get to that) – but let's be honest: all cognitive learning is housed in the brain.

Much is made in those books and articles about how phonics is the right approach because it alters the brain. That latter claim is true as far as I can tell (I'm not a neuroscientist so reading such research gives me the heebee jeebees). However, it is not just phonics that changes the brain. The same can be said about any kind of learning, education, physical exercise, meditation and so on. They all alter the brain in terms of the circuits that are formed and the brain's physical properties (such as thickening the hippocampus).

So far, no instructional method has resulted from the study of the brain. Probably the best treatment of the neurological study of the reading brain aimed at a general audience is the now somewhat dated book (first published in 2009), *Reading in the brain: The new science of how we read* by Stanislas Dehaene.

That book has a bit of a split personality – it starts out writing checks that it can't cash and ends up getting real. On page 2, Dehaene claims, "The insight into how literacy changes the brain is profoundly transforming our vision of education and learning disabilities. New remediation programs are being conceived that should, in time, cope with the debilitating incapacity to decipher words known as dyslexia."

Sounds great! That's the kind of assertion that leads to letters like yours. If neuroscience is leading to new ways of teaching, then teachers want to get their hands on those innovations.

But if you were tantalised by that page 2 promise, you're going to be disappointed by the practical directions that neuroscience proposes. Dehaene argues for instruction in phonemic awareness (PA) and concedes that PA is not a prerequisite to reading (kids are likely developing PA and decoding simultaneously). I agree with all of that, but none of those pedagogical conclusions come from brain science – Dehaene usually cites psychological studies to support that type of claim.

Other insights that he shares are that kids learn complex rules or patterns later than simple ones, and that repetition matters when it comes to learning. Duh. Dehaene's own characterisation of these pedagogical claims: "A great many teachers will consider my recommendations redundant and obvious – but it does no harm to specify them" (Dehaene, 2009, p. 229).

Let's get real. Neuroscientific research can do one of two things when it comes to the teaching of reading.

One possible outcome is that it will identify a structural difference (say, between the brains of normal readers and those with dyslexia) or some puzzling neurological process – such as a circuit implicating an unexpected region of the brain. These kinds of findings could, theoretically, lead to the development of new assessments for the early identification of reading problems or suggestions for new and different teaching methods.

Neurological science has not yet led to such practical innovations. They might someday – that research should continue to be funded – but at this stage it hasn't happened.

A second possible contribution that brain study can make is that it confirms what we already know. This kind of confirmational study is more about understanding the brain than how to teach reading. Such research offers possible explanations for why things work the way they do. These studies have revealed that when we read words, we activate visual-phonological circuits in the brain. Such observations have led neuroscientists to conclude that phonics would possibly be more effective and/or

more efficient than the teaching of whole words.

More recent studies (studies that were not yet available to Dehaene) go even further. For example, in one fascinating investigation, subjects were either led to memorise whole words (with a made-up set of orthographic symbols) or to decode those symbols. The decoding instruction led to neural processing like what is observed in the brains of proficient readers (Yoncheva et al., 2015). Word memorisation led to processing more like what we do with pictures than with language.

The conclusion from such studies has been that it makes sense to teach phonics.

I certainly agree with that conclusion, but not because those studies are definitive. My assent comes from the fact that those conclusions are *consistent with* what psychological and pedagogical studies have repeatedly demonstrated for more than 60 years.

My reasoning isn't: "Oh wow, the brain coordinates both visual and phonological information when we read words. Man, I think we should try to teach kids to do that."

It is more: "That's cool. These images of the brain show that kids coordinate visual and phonological information when they read words. I wonder if that is why reading instruction works better when phonics is included?"

I advocate phonics because so many studies show that kids do better in learning to read when that is part of their instruction. I do appreciate that these neurological findings appear to be consistent with those studies of teaching. This concurrence may give me greater confidence, but it would not make any difference in my practice. Of course, it should be noted that the instructional studies can do more than just suggest possible benefits or efficiencies that could result from phonics – unlike the brain studies. No, instructional studies will also provide me with guidance as to what the content of those lessons should be, the types of examples and explanations I should provide, the actions the students should be engaged in, their duration, and other practical specifics that are pedagogically essential if I am to teach something, but that are unheard of in brain studies.

Think about it. What if we had no instructional evidence that phonics improved reading achievement, but neuroscientists had scads of photographs showing that we connect visual and phonological information when we read words? If that were the case, I would not be advocating the teaching of phonics.

Instead, I'd be calling for further research to evaluate this fascinating hypothesis in classrooms. The same way such information is handled by the medical community.

Neuroscientists identify unusual accumulations of plaque in the brains of Alzheimer patients. Based on that information, physicians don't immediately start prescribing anti-plaque medications. They wait until there are medical studies showing that reducing plaque works. Despite the obvious conclusion from brain images that plaque causes this disease, further study was required and that showed that plaque removal (or plaque removal alone) is neither a cure nor a palliative.

Neuroscience is largely a correlational enterprise. Scientists analyse brain images and look for patterns and consistencies. That information is then translated into hypotheses and possible explanations for how those patterns connect to external behaviours and conditions.

In reading, most neural studies have explored how children read, not how they learn to read. Longitudinal studies, for instance, have been unusual (Wang et al., 2023). Until recently, fMRIs could be used only with the reading of single words. Because those studies couldn't look at connected text, they were unable to consider the impact of semantic context (Junker et al., 2023; Terporten et al., 2023), how ambiguous words are processed (Mizrachi et al., 2023), the role of morphemes (Marks et al., 2024), font differences (Wu et al., 2023), or anything else about how we process written language. The newer studies, as they have looked at phenomena more like real connected reading, have not contradicted the explanations formulated from the images of single word reading, but time will tell.

Back in the 1960s and 1970s, there were studies that compared children who received little or no phonics with those who received a heavy dose of it. Most kids in both groups learned to read (albeit with less failure, greater average achievement and better spelling ability in the phonics groups). But what about those kids who learned to read successfully without phonics? How do brains take such different learning paths to get to the same neural processing outcome?

I don't know the answers to those kinds of questions, but I do know that the explanations that have been provided so far tend to neglect variations in learning and processing (Debska et al., 2023; Wat et al., 2024).

My advice?

I wouldn't look for a consultant who knows the neuroscience, but for one who has a deep understanding and appreciation of the findings of instructional study. Your teachers don't need to know how the brain processes single words, but what content if taught and what instructional methods if used are likely to be most successful in raising students' reading achievement. Except in the most general terms (e.g. teach phonics, encourage kids to read a lot), neuroscience has few practical suggestions that do any more than confirm what you and your teachers already probably know.

This article originally appeared on the author's blog, Shanahan on Literacy.

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What's in a name?

Greg Ashman

How bad ideas survive and thrive in the world of education.

The idea that knowing the name of someone or something gives us power over them is a common theme in folklore, from Rumpelstiltskin to African folktales. Names are more than just a label. We have invested them with a greater potency. And this tradition is alive today in philosophies such as critical theory that assert that language is more than just a way of communicating – it is used by dominant groups to perpetuate their power. In this context, it is intriguing to watch critical theory inspired social justice movements wriggle, squirm and object strongly to attempts to name them.

Perhaps this history has something to do with the word games we play in education.

I receive emails from mathematics teachers from time to time, and there is one recurring theme – their school or district has implemented a new program, and the teacher wants to know if there is any evidence available about its effectiveness. This always comes from a position of scepticism. The teacher knows the program is nonsense, but they are being told, with no citations, that it is evidence-based. Two recent examples of programs I have been contacted about are 'Building Thinking Classrooms,' and 'Cognitively Guided Instruction'.

When emailed like this, it is often the first time I have heard of the program and so I look it up and realise it is a form of problem-based learning but maybe with a few tweaks and idiosyncrasies. However, I know it is futile providing my correspondent with the evidence on problem-based learning because their colleagues will dismiss any evidence unless it is about *this specific thing*.

Yet *this specific thing* is unlikely to have been thoroughly researched by advocates, let alone anyone who may be critical. So, instead, I advise my correspondent to flip the argument. It is, after all, down to the advocate of this specific thing to provide evidence for it, not the duty of everyone else. Still, this seems unsatisfactory when the wider evidence shows it's unlikely to be effective.

Notice how I called it 'problem-based learning'. I like this term because it's what you see if you walk into one of these classrooms – students attempting to solve problems. However, other names have come and gone like 'discovery learning' and 'constructivist teaching'. They are always initially owned by advocates who, a few years down the line, disavow them.

For instance, if you post online a criticism of 'discovery learning' that is as relevant today as it was when it was written, you are likely to be greeted with a chorus of, "Nobody is in favour of *discovery* learning!" from people who promote a remarkably similar approach under a new name. If pressed, the only features of their supposedly new method they are likely to volunteer are that it uses lots of explicit instruction and provides lots of guidance – doubtful claims that at least show a growing awareness of the available evidence and likely criticisms.

I don't actually care for the term 'discovery learning' because I don't think students discover all that much. As a label, it refers more to an intention than a realistic outcome. Logically, if a student is presented with a problem they don't know how to solve, they have one of two options. They may deploy problem-solving moves they already know, or they may invent new problem-solving moves. Given that our collective body of effective mathematical problem-solving moves has been developed over many centuries by mathematicians, the first response seems far more likely than the second one. So, at best, problem solving involves practising moves we already know.

Practice is an essential part of learning mathematics. Once students have learned certain moves, they need to practise them. However, the kinds of problems used in problem-based learning are usually an inefficient way of doing this. Moreover, if we *base* teaching on problems, we limit the amount of new mathematics students will learn.

When attempting problem-based learning in real life, I have seen teachers scour the room for maybe one student who is halfway towards the new idea they want students to 'discover', push that student over the line and then loudly trumpet this to the rest of the bemused-looking class, usually by requiring the successful student to ventriloquise the teacher's thoughts.

All a bit pointless.

However, I am happy if you want to call it 'discovery learning', or anything else. As long as you are using those basic principles, the same criticisms apply. Ultimately, it's not what you call it, but what it *is* that counts.

This is similar to the response to the publication of Kirschner, Sweller and Clark's seminal 2006 paper that I linked to above – *Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching.*

You might think that the near exhaustive list the authors supplied would be enough to stop with the word games. Unfortunately not.

Instead, critics picked on the term 'minimal guidance'. Rather than engage with the arguments in the paper – too hard – they argue variations on: "My form of constructivist learning uses loads of guidance." Again, having seen problem-based learning in action, I doubt this.

This was a theme of two of the three critical responses to the Kirschner et al. paper (here and here – this is the other one for completeness). The authors then responded to these in a reply to commentaries. There was then a conference debate and finally a book where both sides could put their case – *Constructivist instruction: Success or failure?*

Sigmund Tobias, one of the neutral editors of this book, had the following to say in his conclusion (p. 346):

> *A careful reading and re-reading of all the chapters in this book, and the related literature, has indicated to me that there is stimulating rhetoric for the constructivist position, but relatively little research supporting it. For example, it is encouraging to see that Schwartz et al. (this volume) are conducting research on their hypothesis that constructivist instruction is better for preparing individuals for future learning. Unfortunately, as they acknowledge, there is too little research documenting that hypothesis. As suggested above, such research requires more complex procedures and is more time consuming, for both the researcher and the participants, than procedures advocated by supporters of explicit instruction.*
>
> *However, without supporting research these remain merely a set of interesting hypotheses. In comparison to constructivists, advocates for explicit instruction seem to justify their recommendations more by references to research than rhetoric. Constructivist approaches have been advocated vigorously for almost two decades now, and it is surprising to find how little research they have stimulated during that time. If constructivist instruction were evaluated by the same criterion that Hilgard (1964) applied to Gestalt psychology, the paucity of research stimulated by that paradigm should be a cause for concern for supporters of constructivist views.*

Which seems pretty conclusive until proponents of the exact same methods decide to now slip off the 'constructivist' label. None of Tobias's argument then applies, right?

It is this ability to shapeshift and extricate itself from names that have fallen afoul of the research that allows these methods to keep returning. The only solution I can think of is a better understanding of research within the community of teachers. That way we may challenge or, at the very least, laugh at and ignore those who seek to sell the same old magic beans under a new name.

This article originally appeared on the author's blog, Filling the Pail.

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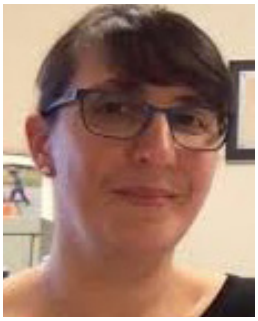
Our research shows children produce better pieces of writing by hand. But they need keyboard skills too.

Anabela Malpique

Deborah Pino Pasternak



Susan Ledger

Children today are growing up surrounded by technology. So it's easy to assume they will be able to write effectively using a keyboard.

But our research suggests this is not necessarily true. We need to actively teach students to be able to type as well as write using paper and pen or pencil.

Our research

Our research team has published two recent studies investigating children's handwriting and typing.

In a study published last month, we looked at Year 2 students and their handwriting and keyboard writing. This study involved 544 students from 17 primary schools in Perth, Western Australia.

We assessed how easily students wrote stories using paper and pencil compared to writing stories using a laptop. We found they produced longer and higher-quality handwritten texts. This was based on 10 criteria including ideas, vocabulary, spelling and punctuation.

These findings echoed our December 2023 study where we did a meta-analysis of studies published between 2000–2022. These compared the effects of writing by hand or keyboard on primary students' writing.

We looked at 22 international studies involving 6168 participants from across different countries, including the United States, United Kingdom, Canada and other non-native English-speaking countries such as Germany and Portugal.

Our analysis showed primary students produce higher-quality texts using paper and pen or pencil than when using a keyboard.

Why are kids stronger in handwriting?

In Australia – as in many other countries – children are taught to write by hand first. Keyboard writing is only added as an extra skill once handwriting has been mastered.

We know it is very important to continue to teach children to write by hand, despite so many advances in technology.

Studies show teaching handwriting in the first years of schooling is connected to improved spelling and greater capacity to write well and quickly in primary and later years of schooling.

Other studies show using handwriting to create texts (such as notes) promotes our capacity to learn and memorise information.

But they also need to learn how to use keyboards

We know it is also important for students be able to write quickly and accurately using a keyboard.

They will need to use keyboards to write for study, work and life as they get older. This process needs to become automatic so they can concentrate on the content of what they are writing.

Our research has consistently shown young people who can spell and write quickly and accurately are able to produce longer and higher quality pieces of

Our analysis showed primary students produce higher-quality texts using paper and pen or pencil than when using a keyboard.

writing. Other studies have shown when children face difficulties in handwriting or typing, they may often avoid writing altogether and develop a negative mindset towards writing.

Learning to type is complex

As our research suggests, students also need to be taught how to use a keyboard. Much like handwriting, it requires a complex set of cognitive, visual and motor processes, requiring frequent practice and instruction.

It involves learning the location of the keys on a keyboard, combined with spatial skills of positioning, and moving fingers to press the keys in the correct sequence. Students need time to practise so they can move beyond the 'hunt and peck' motion (where you have to hunt visually for each key).

Research also suggests teaching about keyboards is more effective when spread out over several years.

First, children need to understand letter locations on the keyboard and the position of their hands, which can be developed via online practice exercises monitored by teachers. Accuracy and speed should not be emphasised until students have mastered where letters are.

Which comes first?

While students ultimately need to be able to write both on paper and using digital devices, there are unanswered questions about the order in which handwriting and typing should be taught or whether they should be taught together.

We also don't yet know if it matters whether students are learning to write via keyboards, touch typing on tablets or by using stylus pens (devices that look like pencils and write via screens).

More research is needed to support teachers, students and families.

How to help your child

Despite these unknowns, there are many things we can do to help students learn how to write on paper and using a keyboard. These include:

- **dedicate time for practice:** Teachers can build regular times in class to write and send home small tasks (such as writing a shopping list, finishing a story or describing a monster).
- **join in:** Instead of 'policing' your child's writing, show them what you write in your everyday life. As you write, you can talk about what you will write (planning) and you can share ideas about how you can make your writing clearer or more exciting.
- **talk about your mistakes and find ways of correcting your writing:** When adults talk about their errors or doubts, they make them a natural part of the process.
- **ask children to read what they have written:** This provides opportunities for correction and celebration. Praise children's bold attempts such as using new words or experimenting with expressions.
- **give children choice:** This gives children some control. For example, they can choose a topic, they can mix art and letters, or they can choose paper or keyboard.
- **display their writing:** Make children's writing visible on your walls or fridge or as wallpapers on your devices to instil a sense a pride in what they have done.

This article originally appeared on The Conversation.

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Hoping for the best is not a viable strategy

Margaret Goldberg

Where does the Science of Reading movement go from here? A literacy activist reflects on the current situation in the US.

We're keeping our worries about the Science of Reading movement quiet, afraid that voicing them will somehow increase the chances that it could fail. But anyone who cares deeply about its success is plagued by 'what ifs' that keep us up at night.

What if we fall short because …

- we're expecting too much of teachers?
- we've underestimated the support schools need?
- funding dries up?
- schools overcorrect and provide explicit instruction at the expense of students reading and enjoying books?
- curriculum developers continue to offer topic-focused units instead of the lessons needed to help students understand complex texts?
- no one fights for the kids who depend on school for language instruction after decoding instruction improves and dyslexia advocates have moved on to other causes?
- people abandon the work when they realise there's still so much to learn?
- researchers continue using schools to conduct studies and extract data, but never learn how to actually help teachers?
- there's no system for monitoring implementations across the country to learn what works?

Anyone knowledgeable about reading research and what's happening in classrooms has worries like these. But most of us have remained quiet, afraid of seeming unsupportive or of slowing the momentum that's been building. I worry, though, what will happen if we don't speak up?

How will we feel if a summary of this period in history is:

> *The Science of Reading, a wide body of interdisciplinary research about reading, was dubbed 'SoR' and it became a brief movement in education. Teachers aspired to align their instruction with scientific evidence, but due to lack of support and misinformation, they failed to implement effective practices. Student achievement remained stagnant, and teachers came to believe that factors outside the classroom have a greater influence on student learning than classroom instruction.*

A few brave people have said we're well on our way to that future:

> *Somehow, we have catapulted from a very helpful, informative body of research to this point where SoR is a movement, a*

> *group to belong to, an overarching pedagogy, a belief, a rebuttal, a title, a platitude. We have so many experts across the globe disseminating information via professional learning who rarely have the practical expertise to support sound implementation, so en masse we've activated the adage of 'a little bit of knowledge is dangerous' (McLean, 2024, para. 6).*

> *What I'm fearful of, cause I've seen it so many times, is movements sometimes gloss over detail. And here, the details are so critical (Lyon, 2024, 13:50 minutes).*

Slowing things down might be a good thing. As the SoR movement picks up momentum, implementations are going awry (here, here, here, and everywhere). School systems are complicated, political and resistant to change. State, district and school leaders are largely unaware of the implementation science that could help guide their work, so they act fast and without careful plans. Big bold promises, impassioned speeches and even large curriculum purchases, are easier than the daily work of helping teachers learn to teach reading.

None of us wants to undermine progress, but we need to temper the dogmatism and hurry of the SoR movement. Admitting that the work will be complicated is a step in the right direction. Every worry I listed (and countless more) is a problem we need to slow down to fix.

District and state leaders are focused on reading right now, and while that focus won't last, they do want their initiatives to be successful. Now is the time to establish research to practice partnerships that can outlast the SoR trend.

The SoR movement may sputter out, as movements tend to do, or it could mature and permanently shift the foundation of our educational system. How we use this moment will determine how much reading research helps schools in the future.

This article originally appeared on The Right to Read blog.

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Big bold promises, impassioned speeches and even large curriculum purchases, are easier than the daily work of helping teachers learn to teach reading.

The benefits of leisure reading

Nicola Bell

Leisure reading is not only a potential source of enjoyment for children; it's also good for them.

What is leisure reading?

'Leisure reading' is the term used to describe the activity of engaging with a written text for one's own pleasure. The amount of time someone spends leisure reading reflects how much they decide for themselves that they want to read, as opposed to the kind of reading that might be required for study purposes. Reading that is undertaken for either of these reasons (i.e. for fun or by necessity) is captured by the all-encompassing term 'print exposure'.

Because there is an element of autonomous text selection involved in leisure reading, it is generally studied in situations where readers can engage with text mostly independently. This is not to say that children can or should only read for enjoyment once they reach a certain threshold of proficiency. The kind of shared and adult-led reading practices that are employed with younger or still-developing readers are not, by definition, unenjoyable. They just don't fit neatly into the 'leisure reading' category.

Why is leisure reading important?

In children and adolescents, leisure reading is closely linked to reading proficiency. In other words, those who read more in their spare time are generally better at it than those who do not. The direction of causality is understood to go both ways: if you're good at reading, you're more likely to want to read more, and if you read more, then you're likely to improve.

In this article, the focus will be on the amount-to-ability direction of causality. There are at least four ways through which leisure reading may be expected to improve an individual's reading proficiency.

1 Word recognition automaticity

According to Share's (1995) self-teaching hypothesis, "each successful decoding encounter with an unfamiliar word provides an opportunity to acquire the word-specific orthographic information that is the foundation of skilled word recognition" (p. 155). It is by repeatedly applying their decoding knowledge to text that developing readers strengthen and refine their sight word representations. Unfamiliar words turn into familiar-ish words, which turn into words that can be recognised instantaneously (e.g. Ricketts et al., 2011).

The 'frequency effect' provides a clear illustration of this item-based learning: the more a word exists in print (i.e. the more times we can assume someone has been exposed to it), the quicker that word is generally recognised (Brysbaert & New, 2009).

2 Vocabulary

One of the main ways leisure reading is assumed to impact on reading proficiency is via the mediator of vocabulary. In fact, books should be considered particularly important for this purpose because they contain a

higher proportion of low-frequency words than what might otherwise be heard in spoken language (Korochkina et al., 2024). As such, written text plays a key role in exposing children to unfamiliar words and morphemes, while also giving new contexts for familiar words.

Knowledge of a word's meaning is not stored in long-term memory as an isolated dictionary entry, but rather as part of a vast semantic network that is continually refined in response to exposure to its use. "You shall know a word by the company it keeps," as stated by Firth (1957; cited in Nation, 2017). By seeing a word situated in its written context, the reader may abstract information about that word, such as its part of speech (e.g. noun or verb) and its relationships with other words. This implicitly learned knowledge then informs what we know of as that word's 'meaning'. And this knowledge, in turn, helps the reader comprehend the overall text.

There is a great deal of evidence to indicate that, under experimental conditions, a reader's knowledge of unfamiliar word meanings improves through incidental exposure to print (Cain et al., 2003; Shefelbine, 1990; Valentini et al., 2018). Whether this extends to incidental exposure to print via leisure reading is a slightly different question. It's also a more difficult question to answer because of the free-choice factor inherent to leisure reading. How can researchers assess a student's learning in response to a text while also allowing the student to decide when, where and even whether to read that text? Only one research group has attempted this to date, and their results conform to those from other more controlled studies: reading facilitates vocabulary learning (van der Kleij et al., 2020).

3 Syntax

Implicit knowledge of syntax and grammar is also assumed to be learned through exposure to print, although this learning is incremental and not straightforward to measure in a pre-/post-test experimental setting. Nevertheless, there is correlational evidence that syntactic structures that are more frequent or predictable are generally read more quickly (Levy et al., 2012). This finding is similar to the frequency effect noted earlier. It supports the idea that reading more may be expected to result in better syntactic knowledge, since written text contains more complex (and a greater diversity of) sentence types than spoken language (Hsiao et al., 2022; Montag, 2019).

Relatedly, individuals who read more tend to produce more complex sentences (Montag & MacDonald, 2015) and demonstrate more mature online processing of sentence and pronoun ambiguity (Arnold et al., 2019; Farmer et al., 2017).

4 Background knowledge

Another area that potentially mediates the causal relationship between leisure reading amount and reading proficiency is domain or background knowledge. The important role that written text has in improving readers' knowledge is built into the commonly used phrase, 'reading

In children and adolescents, leisure reading is closely linked to reading proficiency.

One of the main ways leisure reading is assumed to impact on reading proficiency is via the mediator of vocabulary.

to learn'. The logical extension of this phrase is the idea that those who engage more with written text, learn more.

Ultimately, this knowledge is then expected to feed back into the reader's comprehension of subsequent texts on the same topic and/or of the same text type. According to Hirsch (2003), "to make constructive use of vocabulary, the reader … needs a threshold level of knowledge about the topic being discussed" (p. 17). He gives the following sentence by Einstein as an example:

> *It will be seen from these reflections that in pursuing the general theory of relativity we shall be led to a theory of gravitation, since we are able to produce a gravitational field merely by changing the system of coordinates.*

The words all make sense, but a reader with no background knowledge about Einstein's research (e.g. me) cannot bring enough context to them to give them meaning.

What now?

I hope you are convinced by now that leisure reading is a good thing – not just because you and I like to read and it's nice when people like what we like, but also because of the various ways leisure reading can actually improve reading proficiency.

But what is there to be done with that information? If we agree it's a good thing, then how do we encourage leisure reading in students?

Following are some ways that teachers (and parents) can try to motivate leisure reading in children and adolescents:

- *Make books available.* Provide students with opportunities to browse and borrow a range of age-appropriate books. Quite simply, students cannot read what they cannot access.
- *Help with book selection.* While choice and autonomy are important motivational factors, students may also need guidance in finding a text that aligns with their interests and reading ability. This is particularly important for younger students who are just entering the world of independent reading, although, interestingly, difficulty choosing the right book has been identified as a barrier for teenagers as well (Australia Reads, 2023).
- *Create a book-positive, literacy-supportive culture.* For teachers and parents alike, this means showing an interest in and communicating about students' reading experiences (De Naeghel & Van Keer, 2013). It also means modelling reading yourselves and, as per the first dot point, having plenty of available books.
- *Build reading skills.* Success breeds motivation, which is why explicitly targeting literacy skills in the classroom is critical. I stated early on that the focus of this article was on the amount-to-ability direction of causality, but that focus isn't intended to undermine the importance of ability-to-amount effects. Without a solid understanding of how to decipher the phonic and morphological constituents of words, children will struggle to read independently. These difficulties may absolutely be expected to negatively affect their motivation and consequent reading habits (McArthur, 2024).

Dr Nicola Bell [@NicolaBellSP on X] is a Research Fellow in the MultiLit Research Unit.

Do our literacy heroes fail us, or do we fail ourselves?

Scientific research findings aren't black and white, and that ambiguity is okay.

Harriett Janetos

I read Bertolt Brecht's play *Galileo* several decades ago in college, but the impact of these simple lines has never faded:

> *Andrea: Unhappy the land that has no heroes!*
>
> *Galileo: No. Unhappy the land that needs heroes.*

Another historical period, the French Revolution, inspired Dickens to write: "It was the best of times, it was the worst of times" – which is how I've been feeling recently in the 'Science of Reading space': showered with the riches of research; cowed by the overabundance of recommendations. So, we turn to experts for guidance and look for heroes in the field to emulate.

Hero worship is ubiquitous in all walks of life, and Google tells us it's because it "can be considered a fundamental aspect of human behaviour: inspiration and aspiration". I'll buy that. When I first wrote to Linnea Ehri proposing a cross-country trip to meet with her to discuss my many questions related to reading instruction, I framed my request apologetically, with the sheepish acknowledgement that I was sounding a lot like a groupie. But my 'worship' has been well-placed because this literacy giant always speaks through a measured tone tethered to research, cautiously contextualising recommendations that carefully distinguish between possibilities, probabilities and certainties.

Recently, however, I've been thinking a lot about my other literacy heroes after reading Emina McLean's blog, 'Has the Science of Reading become a rampant, thought-terminating cliche?' where she states, "Many educators follow experts blindly in cult-like wonder. And to be fair, educators should be able to trust experts and systems to advise them, but often they can't, at least not in a practical sense" (para 6).

Since then, I've been wondering whether my hero worship says more about me and the allure of aspiration than it does about my idols. Though one can certainly be cautioned for craving validation from those at the top, the propensity to position oneself alongside greatness is a natural inclination.

Thus, when Timothy Shanahan wrote a blog in November 2021, 'RIP to advanced phonemic awareness', which drew comments not only from its focus, David Kilpatrick, but also from Linnea Ehri, Susan Brady, Isabel Beck and Nathan Clemens (all well-schooled in phonemic awareness), I instinctively sat up and took notice as these experts weighed in on the efficacy of practising phoneme substitution and deletion. The discussion ended in agreement that more research was needed, and David Kilpatrick's closing comments had a collegial tone: "Earlier this year I resumed working on [research]. Given concerns voiced here, I'm happy to bump up that project on my priority list."

"You don't know what the scientists know; but they don't know what you know either."

Isn't this type of exchange exactly what we want from researchers, an acknowledgement of the unknown and a plan to know it? Emina McLean tells us that there is "so much more we have to figure out on the ground, more than any research paper can provide and likely will ever provide" (para 4).

And here's how education professor Carl Hendrick explains it:

> *This is the difference between what teachers do and what experts do: Teachers have a very broad understanding of what they're teaching. Very often experts have a narrow one … Teachers can look at a kid in the middle of a lesson and by the expression on their face go, 'You're not getting it. I'm going to switch to this other explanation I've got in my drawer.' It's a phenomenal level of expertise not seen in many fields.*

In a similar, simpler vein, psychologist Steve Dykstra states, "You don't know what the scientists know; but they don't know what you know either."

With unanimity in Shanahan's comments section regarding the need for more targeted phonemic awareness research, it was clear to me that until that research was completed, I could trust my own expertise in a practical sense as much as, if not more than, I could trust a researcher's tentative recommendations. At the very least, I could provide a classroom context for applying these recommendations.

So far, so good – a good example of experts concerned about lack of research regarding a specific instructional practice, exchanging views related to this practice, and calling for more research to settle their differences. This is helpful and hopeful.

But – how can we be certain that these expressed uncertainties wind their way down Mt Olympus and cross paths with the average teacher? When a widely disseminated recommendation is stated as a certainty rather than a possibility, spreads quickly, gains momentum, and finally emerges fully formed like Athena out of Zeus's head and claims a seat in the staff room, this is worrisome. Isn't this how the reading 'stories' we were 'sold' set up shop in our schools in the first place, forcing us decades later to disentangle the threads leading to the misdirection? As one local school board member told Emily Hanford about Lucy

Calkins, "If Beyonce came and gave a private concert in my district, it would not have been a bigger deal for many of my teachers."

Unfortunately, full transparency from researcher to practitioner is too often lacking as demonstrated in Nicola Bell's 'A deep dive into phonemic proficiency', which explores the same disputes about advanced phonemic awareness skills that Timothy Shanahan does but also covers more contested ground. When Bell explains the recommendation in *Equipped for Reading Success (EFRS)* to teach an alternative to phonics for children not proficient in phonemic awareness, in a flash one's trust is shaken. She quotes an excerpt declaring that this alternative approach is a "developmentally more appropriate starting point than phonics" (EFRS, p. 50).

This declaration prompted me to take a look at the book EFRS recommends, *Let's Read*. Suffice it to say that the methods described are completely incompatible with what research has reliably revealed about effective reading instruction. Fortunately, I am in a position to readily reject these proposed methods and did so. As an informed practitioner, I understand both from research as well as a 'practical sense' that this approach is a far cry from evidence-based reading instruction, so I am positioned to evaluate its shortcomings. I expressed my concerns to the publisher of EFRS, emphasising that I was "shocked at how antithetical this approach is to current reading research" and recommended that the pages describing it simply be removed because "they really and truly undermine the credibility of the book", a credibility forged, in part, from the helpful guidelines in chapter 6 detailing activities for promoting orthographic mapping, some of which I include in my instructional guide to reading.

In his webinar, 'An adaptive, scientific approach to uncertainty', Steve Dykstra says, "We are not required to be right; we are required to have 'right' reasons that we can explain to other professionals … Know where the science ends and your best judgment begins."

Tasking teachers with evaluating expert advice and determining the 'right' reasons to accept or reject it is a tall order. But do we have a choice? At the very least we need to be wary of research that can be either insufficient or inconclusive – or both. Moreover, we need to consider recommendations from experts within the parameters of our own practice, which provide the teaching context necessary to help guide the instructional choices we make. Above all, teachers need to know the difference between an informed expert and a self-interested influencer, while also acknowledging that experts can be so far removed from the classroom that they may get the research right but the recommendation wrong.

A final concern from Emina McLean: "We have so many experts across the globe disseminating information via professional learning who rarely have the practical expertise to support sound implementation, so en masse we've activated the adage of 'a little bit of knowledge is dangerous'" (para 6).

I began with *Galileo* but will end with *Caesar*. Cassius says,"The fault, dear Brutus, is not in the stars, but in ourselves." And I mean all of *our selves*. All of us – educators and experts alike, educational entrepreneurs and publishers peddling their wares – we all need to face our collective faults related to overconfidence and find the professional humility necessary to frame uncertainty within the realm of the day-to-day practicalities of teaching, within the *coalface consequences* – to borrow Emina's evocative phrase – of the choices we make.

In short, we need to bestow upon ambiguity and inconclusiveness the deep respect they deserve.

In short, we need to bestow upon ambiguity and inconclusiveness the deep respect they deserve.

Let's resign our heroes to Homeric legend and reassign a shared burden for decision-making in the school setting.

This article originally appeared on the High Five Literacy blog.

For the past thirteen years, Harriett Janetos has been working as an elementary school reading specialist in Hayward, California. Over 35 years in education, she has taught every grade level K–12: beginning reading instruction to Advanced Placement English, Play-Doh to Plato. Recently, she published an instructional guide to reading, From sound to summary: Braiding the Reading Rope to make words make sense.

Handwriting: Beneficial to reading and often misunderstood

Shawn Datchuk

Handwriting instruction during kindergarten can improve both writing and reading outcomes, such as knowledge of letter names and sounds, spelling and word reading.

Handwriting can be an effective way for students to learn important early reading and writing skills. As noted in a recent systematic review, handwriting instruction during kindergarten can improve both writing and reading outcomes, such as knowledge of letter names and sounds, spelling and word reading (Ray et al., 2022). Indeed, research suggests a close link between writing and reading overall, including a strong relationship between the development of early writing and reading skills, such as spelling and word reading (Kim et al., 2024). In spite of these ties, handwriting is rarely mentioned in the national conversation on how to improve the reading performance of elementary students.

There are several likely reasons why handwriting is an often-forgotten aspect of reading instruction. One reason is that academic standards used by most states quickly pivot from emphasising printing and handwriting by the end of first grade to use of technology (e.g. digital tools or keyboarding) in subsequent grades (National Governors Association & Council of Chief State School Officers, 2010). Despite rapid advances in computer technology, handwriting with a pencil and paper is likely here to stay. Put simply, handwriting is portable and practical. A pencil or pen can be easily carried and used, and they are much less expensive than high-technology devices, such as laptops or tablets. If a pencil tip breaks, then students just need access to a pencil sharpener. If a laptop or tablet breaks? That is a more complicated problem.

Another reason handwriting is often forgotten is because it can be easy to confuse handwriting as more closely associated with drawing than reading. In its most basic form, handwriting occurs when students use a pencil, or any writing utensil (e.g. crayons or marker), to form letters of the alphabet. Similar to drawing, handwriting relies on physical and visual actions – see Datchuk (2015) for brief descriptions of the processes. When kindergarteners draw pictures of their families or write the letter 'b' they use fine motor movement to make subtle adjustments to their pencils and visual-motor coordination to adjust lines and shapes based on visual feedback (e.g. staying within the margins of a paper).

What distinguishes drawing from handwriting is knowledge of the alphabet – specifically skills related to letter identification (e.g. name or sound of each letter) and formation (e.g. appropriate shape, size and slant of letters). To handwrite letters of the alphabet, students use orthographic and phonologic information or memories of each letter shape, formation and name (Datchuk & Kubina, 2013). This knowledge, needed for proficient handwriting, also contributes to proficient reading. For example, when students read or write the letter 'b,' they draw upon their memorised representation of the letter shape, formation and name or sound of 'b'. Because dyslexia, a common reading disability, affects one's ability to connect speech sounds with the symbols that represent them, it is not surprising that students with dyslexia and other reading disabilities often have difficulty with handwriting (Alamargot et al., 2020).

Cognition of early reading and writing

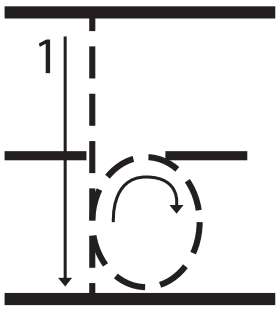
The interplay between working and long-term memory plays a central role in explaining the benefits of handwriting to overall literacy development (e.g. Graham, 2018). Working memory allows for the temporary storage of information for immediate use, such as remembering a sequence of numbers as you dial a phone number, whereas long-term memory stores information relatively permanently. Engaging in writing and reading are cognitively demanding tasks. The numerous skills involved in writing (e.g. text generation of multiple sentences on a topic) and reading (e.g. decoding and interpreting vocabulary) all compete for a limited amount of working memory resources. Put simply, it is hard to juggle all the skills, content and processes involved in reading and writing at the same time.

One of the ways to make it easier for students to read and write is to develop fluency – accuracy and efficiency – with foundational skills. When skills are fluent, they are stored in long-term memory, thereby freeing up cognitive resources to attend to other aspects of a composition or passage. The shifting of letter knowledge (e.g. letter identification and formation) from working memory to long-term memory is likely one of the key reasons handwriting instruction improves reading. Specifically, handwriting helps facilitate the storage of alphabetic knowledge – shape, formation, name and sound of letters – that can also be used to learn how to read.

What can primary teachers do?

During instruction focused on early literacy skills (e.g. phonemic awareness and phonics), schedule specific time for handwriting instruction. For efficient lessons, when students are learning letter identification, also engage them in learning how to form the letter: appropriate shape, size and slant. Research suggests there are several effective instructional techniques to help students acquire handwriting, including:

- showing visual cues of letter shape and formation (e.g. using materials in which letters appear as dotted lines to be connected, along with arrows and numbers showing suggested shape and sequence, as shown below)



- providing students with practice retrieving letters from memory (e.g. activities like 'cover-copy-compare', in which students look at a letter, say the letter aloud, cover it, write it on their own and then uncover the original letter and compare it to what they wrote)
- using systematic and explicit instruction techniques (e.g. lessons featuring scaffolding in which teachers model letter identification and formation, guide independent practice, and test for student independence).

Incorporating these three elements of research-based handwriting instruction, the Iowa Reading Research Center has developed an online tool that allows teachers to create customisable handwriting materials that align to their reading instruction. The tool is called the Literacy LIFTER – Letter Identification and Formation for Transcription and Early Reading. The materials include visual cues (e.g. arrows and numbers) showing legible letter shape and formation, practice activities where students gradually recall more letters from memory, and instructional scripts that structure each lesson in a systematic and explicit manner.

Handwriting is an often forgotten and misunderstood element of early literacy instruction. It deserves more attention, however, as the knowledge and skills related to handwriting underpin not only writing development but also reading. The IRRC's Literacy LIFTER aims to demystify the instruction of handwriting. When incorporated into reading instruction, this tool helps reinforce the foundational skills that underlie reading.

This article originally appeared on the Iowa Reading Research Centre blog.

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NAPLAN results again show 1 in 3 students don't meet minimum standards

Jessica Holloway

Schools have been releasing individual results to families since the start of Term 3. Now, we have the overall results.

The latest national NAPLAN results are out and they are very similar to last year. In both 2023 and 2024, we have seen about 1 in 3 school students fall short of minimum numeracy and literacy expectations and about 1 in 10 needing additional support. What does this mean?

What is NAPLAN?

Introduced in 2008, NAPLAN is an annual test of all Australian students in Years 3, 5, 7 and 9. It aims to see whether students are developing basic skills in literacy and numeracy. Students receive one of four bands: 'needs additional support', 'developing', 'strong' and 'exceeding'.

Schools have been releasing individual results to families since the start of Term 3. In August, we had the overall results.

What are the results?

In reading, the average proportion of students who achieved 'exceeding' and 'strong' levels in 2024 was 67%. This increased from Year 3 (66.3%) to Year 5 (71.4%), then dropped in Year 7 (67.3%) and Year 9 (63%).

The average proportion of students who achieved 'needs additional support' was 10.3%. This dropped from Year 3 (11.3%) to Year 5 (8.7%) and increased in Year 7 (10.2%) and Year 9 (11.1%).

In numeracy, the average proportion of students who achieved 'exceeding' and 'strong' was 65.5%. This increased from Year 3 (63.5%) to Year 5 (67.8%), was relatively stable in Year 7 (67.2%) and then dropped in Year 9 (63.4%).

The average proportion of students who achieved 'needs additional support' was 9.5%. This dropped from Year 3 (9.7%) to Year 5 (8.6%) and increased in Year 7 (9.4%) and Year 9 (10.4%).

Like last year, more Indigenous students and students in very remote schools were identified as 'needs additional support' than their peers. For example, in reading, across all year groups, around 1 in 3 Indigenous students are in the 'needs additional support' level, compared to about 1 in 10 non-Indigenous students.

Recent changes

This is only the second year of the current NAPLAN system.

Early last year, the testing window was moved from May to March. In 2023, NAPLAN was also done entirely online for the first time. There was also a major change in how NAPLAN is reported. Now, results are reported against four proficiency levels instead of 10.

How did these changes affect the 2024 results?

It was possible such big changes could have created years of instability, but this hasn't been the case so far.

This lack of change in the results can be interpreted a couple of ways. The Australian Curriculum, Assessment and Reporting Authority Chief Executive, Stephen Gniel, said the results are a "testament to the hard work" of schools and students.

Not only have NAPLAN changes been difficult to navigate, but we also cannot forget the impact of COVID-19 on student learning. Teachers have had a tremendous responsibility to help students return to a sense of normal in the past two years.

However, the Education Minister, Jason Clare, has a different interpretation. As he said, "We have a good education system, but it can be a lot better and a lot fairer and that's what these results again demonstrate."

These results provide another year of evidence our system is fundamentally unfair and too many children are being left behind.

Who 'needs additional support'?

One advantage of the new proficiency levels is they explicitly tell us how we should respond to the results.

This is not new information. Year after year, students from more advantaged backgrounds perform higher on tests like NAPLAN. We also know inequitable access to resources is a major factor in these results.

What is new is these results themselves tell us what to do: 'provide additional support'.

How can we do this?

Last month, the federal government released details of the next funding agreement for Australian schools, due to start in 2025.

As part of this, Clare announced $16 billion of federal funding for public schools. This funding is only available if schools implement significant changes, including phonics and numeracy checks in the early years, evidence-based teaching and catch-up tutoring.

Clare has said he wants this money to make a difference to "the kids who really need it".

We know government schools have not received adequate funding, as promised by previous reforms.

As the next phase of school funding in finalised this year, governments should ensure schools with large proportions of disadvantaged students receive the support they need to help all Australian students succeed.

This article originally appeared on The Conversation.

Jessica Holloway is a Senior Research DECRA Fellow within the Institute for Learning Sciences and Teacher Education at Australian Catholic University. Her research is primarily focused on education policy and accountability, particularly related to teacher quality, teacher education and assessment. Before ACU, Jessica was an Assistant Professor of Educational Leadership at Kansas State University, and a classroom teacher of English/language arts prior to that. She is also a co-convenor of the Policy and Politics of Education special interest group for the Australian Association for Research in Education.

These results provide another year of evidence our system is fundamentally unfair and too many children are being left behind.

Learning to handwrite fluently gives your child a big advantage

David Kinnane

Some people think that handwriting is out-moded, like a horse-drawn carriage, rotary-dial phone or fax machine.

Like many males, I copped a lot of flak about my handwriting in primary school, including from my nemesis, Vicky, who forged perfect letters effortlessly with insufferable smugness.

But learning to handwrite is not about pretty letter-making. It's about developing automatic, fast and legible handwriting. This:

- frees up working memory to focus on ideas, planning, organisation and expressive language
- improves both the quantity and quality of writing
- helps with notetaking and remembering content
- provides a big advantage with assignments and high-stakes exams.

Directly teaching handwriting to young students:

- enhances legibility and fluency
- improves sentence-writing skills, writing quantity and quality.

Learning to handwrite fluently takes a lot of time: In Years 4–6, handwriting accounts for 42% of the variability in the quality of children's writing; and handwriting speed continues to increase until at least Year 9.

If, for whatever reason, handwriting remains effortful and slow, students will avoid writing and fall further behind their Vicky-like peers.

If a student's handwriting is illegible, teachers will form negative judgements about the quality of the writing, and award lower marks than an identical response written legibly.

Over time, students inevitably develop their own handwriting style, often combining manuscript (printed) and cursive letters. What matters most is automaticity, speed and legibility.

Free resources exist to help teach students to hold a pencil properly and to write letters in a sensible, sequenced way (see links below).

Learning to type quickly is, of course, still a good idea (see here for a free resource).

Handwriting links

Blog post about pencil grip by Banter Speech
Workbook by Spelfabet
CASL Handwriting Program by Graham and Harris (1999)
Webinar by William Van Cleave (2016)
Handwriting resources by PhOrMeS
Information sheets by The Royal Children's Hospital Melbourne
Literacy LIFTER by Iowa Reading Research Centre

This article originally appeared on the Banter Speech & Language blog.

David Kinnane [@speechbloke on X] is the Principal Speech Pathologist at Banter Speech & Language (www.banterspeech.com.au), a clinic in North Strathfield, Sydney. He has a special interest in helping school-age children with reading and writing challenges, and is a Director of SPELD NSW.

Australian school handwriting

What handwriting style should students be taught? It depends on the state.

Alison Clarke

While the importance of handwriting is well-known, Australia's Curriculum 9.0 is hilariously vague about it. After a year at school, children are expected to "… correctly form known upper- and lower-case letters". Which letters are expected to be known is unknown. Eight Handwriting and Keyboarding sub-elements are listed here. The first one says:

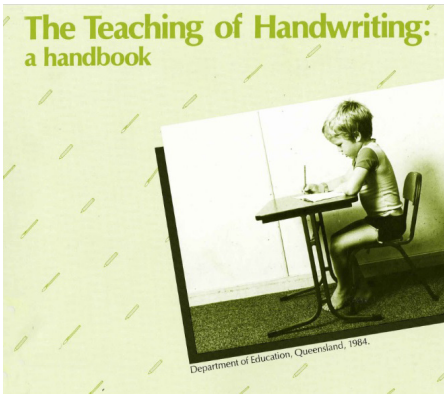
- produces simple handwriting movements (writing, or drawing?)
- experiments with pencils, writing implements or devices (up noses? down socks?)
- writes letters which resemble standard letter formations (how closely? what standard?).

Leaving handwriting style decisions up to the states has worked out about as well as letting states decide railway gauges. Australia now has five approved handwriting styles for beginners, most with manuscript, pre-cursive and cursive versions. This must be confusing for the thousands of young kids who move interstate each year. It must drive early learning publishers insane.

Since foxes are helping send our native wildlife towards extinction, I've devised my own every letter sentence to demonstrate our five beginners' handwriting styles, while promoting adorable marsupials.

State/Territory	Population	Font
VIC, WA & NT	10,087,500	Six fit phascogales wanted to jump over a lazy quoll's back.
NSW & ACT	8,905,000	Six fit phascogales wanted to jump over a lazy quoll's back.
QLD	5,528,300	Six fit phascogales wanted to jump over a lazy quoll's back.
SA	1,866,300	Six fit phascogales wanted to jump over a lazy quoll's back.
TAS	574,700	Six fit phascogales wanted to jump over a lazy quoll's back.

The first style comes from my state. I'm not a fan. Beginners' versions of Victorian Modern Cursive often make the letter 'n' look like 'm', 'r' look like 'v', 'k' look like 'R', and put a vertical line on top of letter 'o'. Children don't see writing like this in books, or much beyond school. I wonder if it's based on the same teach-novices-to-imitate-experts logic as 'whole language'. Does research show that learning to write cursive 'p' and 'b' helps you read non-cursive p/q and b/d in books? I'd prefer kids start with simpler letters and get plenty of instruction about how to form and place them as they say and spell words, so that visual information, motor plans and articulation fuse nicely in their brains. Joiny bits can come later.



Educational Psychologist Murray Evely (a nice fellow, we once both worked at Footscray School Support Centre) led the development of Victorian Modern Cursive in 1985. NSW's Foundation Style was devised two years later. Queensland's 1984 handwriting handbook, with the above glorious cover photo, can still be downloaded here. South Australian Modern Cursive was devised in 1983 and updated in 2006. Tasmania's 1985 style has been updated a few times, most recently last year, when Tasmanian Handwriting Guidelines were developed with the help of academic and consultant Dr Noella Mackenzie. I wonder why different conclusions about shape, size, spacing, slant and joins were drawn from (presumably) the same mid-1980s research?

Every state teaches cursive eventually, mainly because it's considered more efficient. However, US handwriting expert Steve Graham et al.'s 1998 research found that mixed handwriting was faster than both cursive and manuscript, and that a mixed style containing mostly cursive letters was also the most legible. Canadian research in 2013 by Bara and Morin also found that "cursive handwriting was the slower style, whereas mixed handwriting seemed to be more efficient" (p. 601).

Steve Graham recommends teaching beginners traditional manuscript letters for four reasons (see pp. 21–22 of this article):

1 Most children start school already knowing how to write some manuscript letters.
2 There is some (rather dated) evidence that manuscript is easier to learn (Researchers! This topic!).
3 Once mastered, manuscript can be written as fast as cursive, and possibly more legibly.
4 Manuscript may facilitate reading development, as kids' reading material is manuscript, not cursive.

UK handwriting expert Dr Rosemary Sassoon (who Wikipedia says is 93 and now lives in Busselton, WA) researched handwriting styles children find easy to read in 1993, and based her fonts on this research. I wonder if any of the Australian font designers also had the novel idea of asking children which fonts they preferred. Sassoon wrote a book about teaching handwriting, which is now freely available online.

The Victorian Phonics Lesson Plans team is preparing early years systematic, synthetic phonics resources for our local schools. Great! They will be in Victorian Modern Cursive. Hmm. A free version of this font is downloadable here, but it's pretty clunky so I hope the lesson planners have a better-quality version. There's also a free Queensland handwriting font here, but otherwise Australia's official school fonts aren't freely available.

I rang Kevin Brown at Australian School Fonts and wasted about an hour of his time asking about handwriting styles, fonts and related topics. (It's OK, I then bought his fonts.) He said since we've had a National Curriculum (first drafted in 2010), schools can use whatever handwriting style they like. Judging from the orders he receives, many schools are using a different state's style. He also said it's not possible to copyright a handwriting style, only font installation files, which are difficult to write and need updates as software changes. Australian handwriting fonts are also available from the School Fonts website.

Sticking to a specific beginners' handwriting style promotes consistent teaching about letter formation, sizing and placement, and I doubt teachers ask kids who move interstate to unlearn their original handwriting style. Over time we all develop our own style. Explicit instruction and lots of practice seem to be the main things that lead to efficient, legible handwriting, whatever the starting style.

For times when kids say keyboards make handwriting obsolete, I like Bec from Talkin' Chalk's recommended reply: "When the Zombie Apocalypse comes, there'll be no tech. You'll need handwriting." And for an extra start-of-the-week laugh, here's an AI generated version of my favourite handwriting cartoon: the Doctor's Strike (OK, the eyes and fingers are weird, and the bot doesn't understand 'scribble on placards', but the cartoons are all copyright, and you get the idea).

Links
Phascogale picture and information: https://animalia.bio/red-tailed-phascogale/1000
Quoll picture and information: https://www.animalia.bio/eastern-quoll

This article originally appeared on the author's website Spelfabet.

Alison Clarke [@spelfabet on X] has over 35 years' experience as a speech pathologist in schools, the disability sector, hospitals and private practice, and holds a Masters in Applied Linguistics. Her Spelfabet website promotes evidence-based literacy teaching and intervention. She was 2015–16 Vice President of Learning Difficulties Australia (LDA), and has been a City Councillor and Mayor. She received LDA's 2018 Mona Tobias Award and a Medal of the Order of Australia in 2022.

A structured literacy approach for majority Aboriginal and Torres Strait Islander schools: The MultiLit Closing the Gap Initiative

Evidence-based instruction can make a huge difference in the reading outcomes of majority Indigenous schools.

Chloe Allen

Iain Rothwell

In August 2021, MultiLit was invited by the Australian Government to provide literacy programs for students in at least 40 majority Aboriginal and Torres Strait Islander schools as part of the school education measures outlined in the Closing the Gap Implementation Plan. MultiLit entered into an agreement with the Commonwealth in November 2021. Under this agreement, MultiLit provided a structured approach to literacy instruction that included offering its programs and resources, professional development for teachers and learning support staff, the provision of ongoing educational support, and direct Tier 3 tutoring for students via trained MultiLit tutors operating on a tailored tutoring platform (the Initiative).

MultiLit successfully recruited 42 schools into its Initiative from across Australia, including 18 from New South Wales, 10 from South Australia, 9 from Western Australia, 4 from Queensland and 1 from the Northern Territory. Most of these schools are classified as either regional, remote or very remote schools. Currently, all 42 schools remain in the Initiative.

The importance of effective early literacy instruction

The most foundational building block in a child's education is literacy. We know that failure to become a competent reader and writer will impede all other educational pursuits. In turn, this will limit employment prospects, income capacity and potentially many other social outcomes. There are few more important issues in the field of education than ensuring every child becomes literate.

Not only is literacy education important in the early years, but it must also be effective. The Science of Reading and the Science of Instruction have informed what effective teaching should look like. Research shows that the best reading instruction will systematically develop skills in the Five Big Ideas: phonemic awareness, phonics, fluency, vocabulary and comprehension. This will be applied via a tiered approach that recognises that some children will require more support, either in a small-group setting or on an individual basis – a Response to Intervention framework or Multi-tiered Systems of Support.

Researchers also know that commencing education from a point of social disadvantage impacts literacy and, more broadly, overall education outcomes. Social disadvantage and poverty have a huge, well-known and negative impact on literacy achievement in all English-speaking countries (Kinnane, 2020). For example, in 2009, 13.9% of Australian children in the lowest socioeconomic quintile were assessed as 'developmentally vulnerable' in language and cognitive skills, compared to 4.7% of children in the highest quintile. Effective early reading instruction is critical to help 'close the gap'

between children from high-SES and low-SES backgrounds.

Rural, remote and very remote Aboriginal and Torres Strait Islander communities are among the most disadvantaged groups in Australia. Consequently, Aboriginal and Torres Strait Islander youth are under-represented in attaining Year 12 or equivalent qualifications, and this flows on to an under-representation in higher education and employment. While there have been many policy initiatives implemented seeking to address this under-representation, it remains a persistent issue for Aboriginal and Torres Strait Islander communities. Invariably, pathway and transition programs implemented later in life struggle to reverse generational disadvantage. By focusing on the foundational building block of effective early literacy instruction, we can best place Aboriginal and Torres Strait Islander students to achieve their full learning potential and meet the ambitions of Closing the Gap Target 5:

> *by 2031, increase the proportion of Aboriginal and Torres Strait Islander people (age 20–24) attaining Year 12 or equivalent qualification to 96%.*

This benchmark currently stands at 68%.

Impacts on Initiative delivery

The rollout of the Initiative has been impacted by a range of factors, some of which were expected and some that were much harder to predict. The Initiative was launched in the wake of the COVID-19 pandemic. Many schools were in a distressed state with volatility in teacher staffing, school leadership and student attendance. This meant embedding programs and training staff took much longer than originally anticipated.

The extreme remoteness of some of the schools cannot be overemphasised. This impacts many operational components, such as the delivery of programs and resources to the school, the attraction and retention of staff and the ability to undertake site visits. Fourteen of the schools are classified as very remote and two are situated on small islands – Thursday Island and Bathurst Island.

In the partnership schools, the majority of students have attendance rates below 80% – that is, absent more than one day each week.

The level of entrenched social disadvantage as measured by the Index of Community Socio-Educational Advantage (ICSEA) is, for most of the Initiative schools, very high (corresponding to a low ICSEA score). The Grattan Institute found that ICSEA is a powerful predictor of student progress, and at a school level, ICSEA explains much of the variation in student progress (Goss & Emslie, 2018). When the Initiative was first planned, one criterion for inclusion was to select schools with an ICSEA score of 900 or lower – that is, one standard deviation below the mean or lower. The Initiative partnership schools have an average ICSEA score of 686, noting that eight of the schools do not have an ICSEA score. Twenty-five of the schools have an ICSEA below 720, representing approximately the bottom 0.5% of socio-educational advantage.

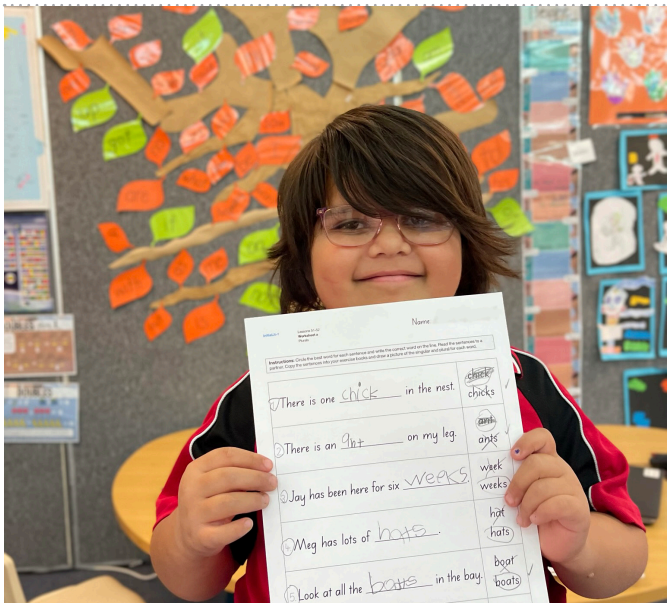
School attendances for the partnership schools are typically very low by Australian standards. School attendance is a critical factor in progressing educational outcomes. Simply put, the less time available for instruction, the lower the opportunity to teach the essential knowledge and skills to allow children to become competent readers. In the partnership schools, the majority of students have attendance rates below 80% – that is, absent more than one day each week. Only nine of the schools have attendance rates higher than 80%, and 10 schools have attendance rates at circa 50% or lower. While attendance is an issue for most low-SES schools, this has also been exacerbated by the impact of the COVID-19 pandemic with school attendances still below pre-pandemic levels.

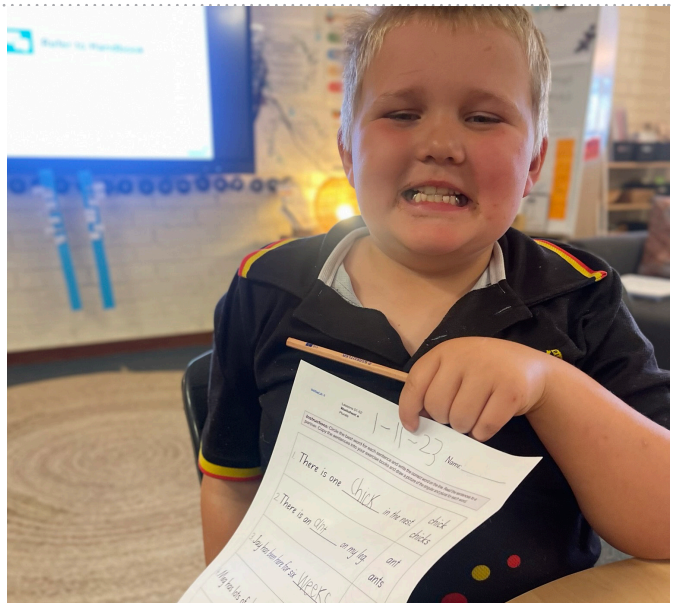
The schools in the Initiative are in communities that can be highly itinerant. This impacts not only school attendance but also the consistency of teaching. In the APY Lands, for example, families often move between communities. A school population can more than double overnight. One benefit of the Initiative has been that there is consistency in literacy instruction across the seven participating APY Land schools. Students can move between schools and receive consistent literacy instruction.

Rather than allow these factors to negatively impact the instructional model, MultiLit has sought to adapt instruction for each school community to be responsive to the individual needs of students. This has seen a greater emphasis on grouping based on current skill level and more flexible approaches to small group work, enabling more positive student engagement and allowing students' literacy skills to progress even if they commence at the beginning of the foundational literacy continuum.

Meeting all students' needs

Utilising a suite of MultiLit programs, the Initiative is an evidence-based, structured and explicit instructional model. To be most effective for as many students as possible, there needed to be adaptations, working with schools in different contexts to make the program effective for each setting while maintaining fidelity. Regular site visits as well as extensive online support allows for a continuity of training and





support for teachers as they face the challenges in the classroom. Given all the factors impacting partnership schools, the greatest challenge is the level of differentiation in each cohort. While student numbers may be low, often less than 10 per class, the equivalent age range for a typical classroom can span many years – three to five, or more.

To enable flexibility, the Initiative emphasised using data to group like students, irrespective of age or year level. For most schools, this was a significant change to historical practice. Teachers were trained to screen students on entry allowing for the placement of students in a program exactly where the student 'needed to be'. Whilst MultiLit programs inherently have a cadence in delivery, this has been adapted to align to the progress of the class. A continual message to teachers has been to avoid rushing or being driven by non-pedagogical timelines such as school calendars.

The use of data has been critical both in establishing the flexibility but also ensuring effective instruction. With the use of data, instruction can be targeted more specifically to the requirements of each student and under a Response to Intervention approach, target additional support where needed. This may also require reteaching and retesting as the data informs practice. It has been important to emphasise to all teachers that they should seek to meet students at their point of need.

A unique feature of the Initiative is access to Tier 3 tutoring via an online tutoring platform for low-progress readers. This provides essential literacy support for those students in the most need. It also helps to reduce the complexity for the teacher, effectively streaming these students away from the main classroom until they have caught up with their peers. In addition, the online tutoring platform has been extended to support whole-class instruction at a very remote school in need. This has provided both necessary classroom teaching but also exemplar explicit instruction for teachers.

The pedagogical approach applied in the Initiative has built a predictable, consistent routine for students. In turn, this has created a safe, trauma-informed learning environment, an essential condition for effective teaching in these communities. This has a positive impact on student engagement over time and ultimately student attendance and behaviour. Schools have reported fewer instances of disruptive behaviour as students experience learning success.

Conclusion

The ultimate goal of the Initiative is to have all students in participating schools reading at a minimum level that is within the average range for their age and year cohort – effectively, closing the gap on the reading performance of Aboriginal and Torres Strait Islander students and non-Indigenous students. Although it has taken longer to establish an effective instructional model across the 42 partnership schools, as schools are reporting their data we can now see the success of the Initiative. Important literacy gains are being demonstrated.

The Initiative is subject to an independent evaluation by the Australian Council for Educational Research (ACER) which will report to the Commonwealth in 2026. MultiLit is in the process of collating a vast amount of data from each school in preparation for this evaluation. An extract of the results will be published in a future edition of *Nomanis*.

Chloe Allen is a proud Awabakal and Dunghutti woman and is the Project Director of the Closing the Gap Initiative at MultiLit. Chloe has previously worked as Head Teacher at Pacific Gulgangali Jarjums and saw the positive impact that direct, explicit instruction had on students requiring extensive support. She currently works to support staff in 42 Aboriginal and Torres Strait Islander majority schools across Australia. The motivation behind her work is to ensure all Aboriginal and Torres Strait Islander students have every opportunity of success.

Iain Rothwell has 28 years' experience in the education sector with a particular focus on the commercial interface. Between November 2009 and July 2020, he held a range of executive roles with Navitas Ltd, including Chief Commercial Officer. He has held executive roles with two public universities as CFO and Director Business Development with the University of Western Sydney and Managing Director of the commercial arm (Access MQ Ltd) and Assistant Vice-Chancellor with Macquarie University. His relationship with MultiLit began in 2002 being responsible for its operations as a university commercial project and in 2006 with his fellow founders, Robyn and Kevin Wheldall, facilitated the establishment of MultiLit as a spin-off company of Macquarie University. From January 2021 Iain became more active in leading MultiLit as its Managing Director.

Nomanis Notes
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Do ‘brain breaks’ help students learn?

Jennifer Buckingham and Maddy Goto

Statement of the problem

It is essential for attention to be maintained for learning to happen effectively. In a classroom situation, there are several internal and external factors that can lead to inattention and a loss of focus. Orienting attention to a specific input or task (concentrating) requires conscious effort. This draws on executive functions that are still developing in children and they therefore can have difficulty attending to lessons for long periods of time.

Proposed solution

Punctuating learning with ‘brain breaks’, typically either a physical or mindfulness/meditation activity for 1 to 5 minutes, is a popular tactic among teachers to reset and refocus students’ attention to the learning task. This allows them to briefly shift focus to a less cognitively demanding activity.

The theoretical rationale – how does it work?

It is hypothesised that a brief shift in focus will allow the brain to reach a state of low cognitive load that will let the information being held in working memory begin its transfer to long term memory, before returning to a learning activity. For young children who are unused to sitting still and paying attention, or for children with attention and/or hyperactivity disorders, brain breaks are seen as a way to release energy and then re-engage with learning.

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

Several studies have examined the effects of active breaks on academic achievement and cognitive functions involving primary school children of a range of ages.

A study by Mavildi et al. (2019) with Australian students in Years 3 and 4 found that active breaks resulted in significant improvements in engagement and significant effects for mathematics performance (d = 0.4, p = 0.045). Mazzoli et al. (2019) studied the relationship between time spent sitting, stepping and sit-to-stand movement with cognitive functions and brain activity in younger Australian students. They concluded that students who spent longer sitting were more easily distracted, but the results for cognition measures were inconclusive. Müller et al. (2021) studied active breaks for Year 4 and 5 students and reported a significant positive effect on attention but not reading comprehension. The reverse was reported for mindfulness breaks, with small positive effects on reading comprehension but no effect on attention.

A systematic review by Watson et al. (2017) included four studies of academic outcomes and found only one significant effect for maths. A meta-analysis by de Greeff et al. (2018) found that active breaks had a positive small to moderate effect on attention (d = 0.43) and mixed but weak results for reading (d = 0.17) and maths (d = -0.18). Likewise, Daly-Smith et al. (2018) described active breaks as resulting in no change in cognitive outcomes and weak effects on academic performance. Masini et al.’s (2020) systematic review described the results of studies of active breaks on cognitive functions as inconclusive and determined that active breaks have “limited or no impact on academic achievement”.

Conclusion

Overall, evidence for the effect of active classroom breaks on cognitive and executive functions such as attention/active engagement is moderately positive, but this does not necessarily translate into learning. There is mixed but weak evidence of the effect of active breaks and mindfulness breaks on academic achievement. This may be due to the quality of the studies, or differences in the type, frequency and duration of the breaks; however, based on the current research, there is insufficient evidence to support the benefits of ‘brain breaks’ for learning.

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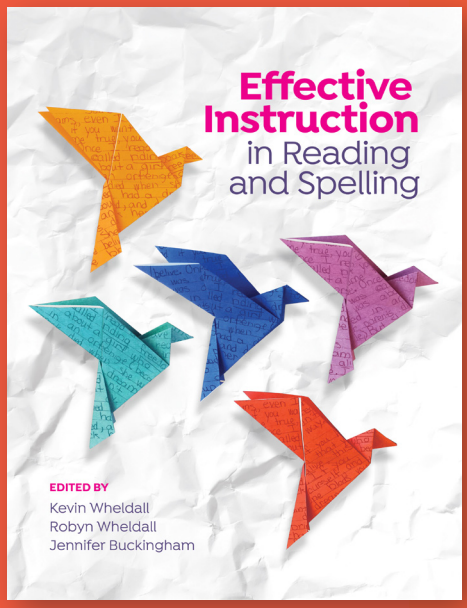

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By Peter Westwood

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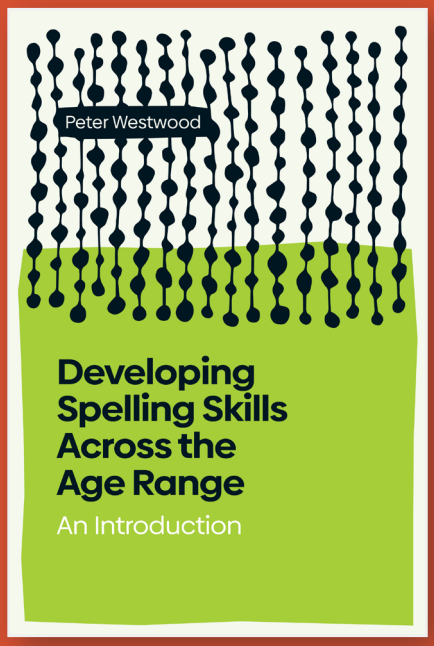

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