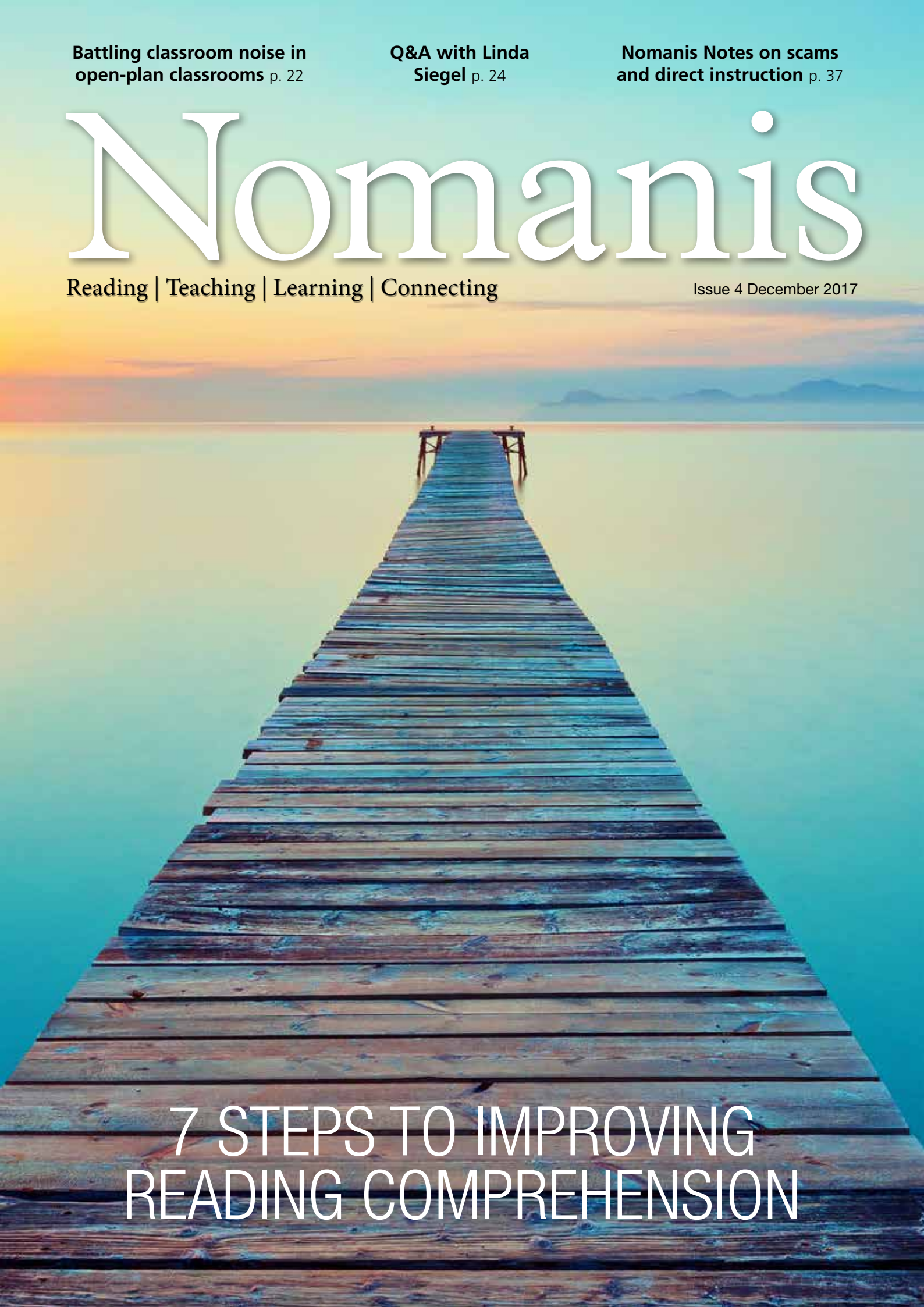
Nomanis

Reading | Teaching | Learning | Connecting

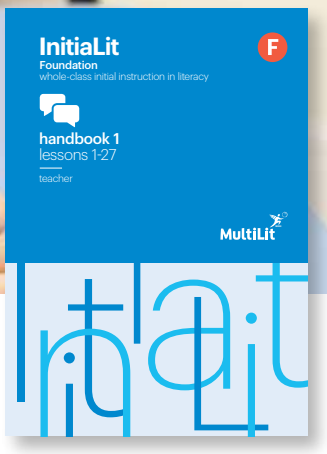
Issue 4 December 2017

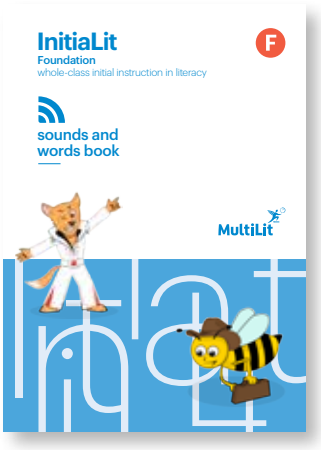


7 STEPS TO IMPROVING READING COMPREHENSION

MultiLit

InitiaLit–Foundation now available





Designed to provide effective initial instruction in reading and related skills, MultiLit has released InitiaLit, a program for whole-class initial instruction in literacy. The first phase, InitiaLit – Foundation, is now available, while InitiaLit – Year 1 and InitiaLit – Year 2 will be released in 2018 and 2019 respectively.

The InitiaLit–Foundation Program incorporates the key components necessary for early reading instruction: phonemic awareness, phonics, fluency, vocabulary and comprehension. The program teaches the alphabetic code through structured, explicit and systematic lessons, which will provide all children with essential foundational knowledge to become successful readers and writers.

What is in the program?

- 126 detailed and scripted lessons to be delivered to the whole class for 20-30 minutes to teach the alphabetic code
- Flashcards, Picture Cards, Templates and other downloadable resources necessary for the delivery of a full lesson
- MS PowerPoint lessons to accompany the script for ease of delivery
- Sounds and Words Books and carefully constructed written activities to facilitate group and independent work during the literacy block
- Storybook Lessons based on 25 popular storybooks to develop and enhance vocabulary and oral language as well as encourage a love of literature
- A set of decodable readers comprising 60 titles to be used during group reading
- Testing and monitoring procedures to assist with the identification of children who may need extra assistance

To find out more about InitiaLit, please visit www.multilit.com/initialit

Contents

Reading | Teaching | Learning | Connecting

Nomanis is published twice yearly by MultiLit Pty Ltd
Suite 2, Level 3
75 Talavera Road
Macquarie Park NSW 2113
Australia
www.multilit.com

MultiLit is a research initiative of Macquarie University

Joint Editors
Emeritus Professor Kevin Wheldall AM
e: kevin.wheldall@multilit.com

Dr Robyn Wheldall
e: robyn.wheldall@multilit.com

Produced by FlapJack Media Pty Ltd
www.flapjack.com.au

Achieving educational excellence in Australian schools

Kevin Wheldall &
Robyn Wheldall

While there was some good news for Australia in the recently released PIRLS 2016 results, the continuing long tail of underachievement in reading remains a serious cause for concern. The time for excuses and denial is over. There is a clear need to confront the issue of achieving educational excellence for more than just the top performers. Doubtless there are many areas of education that need seriously to be addressed but the whole edifice of a successful education system is predicated on effective instruction in basic literacy skills in the early years of schooling. Without wishing to deny the importance of other aspects of education, this early stage of schooling is key.

In short, in our view, reading underpins everything in education. Whatever is studied subsequently, it is learning how to read (and write) that facilitates or hinders future study. It is our contention that nothing will work to lift our game in education until we have brought into play an effective system to ensure that *all* children (with very few exceptions) learn to read and write in a timely fashion, within the first three years of schooling. We believe that there are five necessary steps that need to be taken to ensure that this happens.

First, we should resurrect the concept of the old infants' school for K-2 students, those in their first three years of schooling. (We use the term K to refer to the first year of formal schooling as this is the term that applies in our home state, New South Wales.) This is where the essential work of developing the basic skills of literacy and numeracy should take place. Whether separated geographically or not from the Y3-Y6 provision, conceptually the remit of K-2 units should be clearly differentiated. The emphasis of this K-2 stage of education should be almost exclusively on developing competence in the basic skills of language, literacy and numeracy taught by early childhood experts who are specially trained to provide optimal instruction based on scientific evidence-based best practice. This may necessitate a thinning down of the scope of the early years curriculum to allow this focus. In our view, this is more than justified if the end result is fully literate cohorts more able to avail themselves of the curriculum provided from Year 3 onwards. Many teachers of young children complain about the crowded curriculum and the time demands of covering all the aspects of the curriculum that they are required to address. Just finding sufficient time to devote to literacy instruction is a problem in many of our schools. But if we can focus time and attention on laying the foundations of literacy in the early years of K-2, students will effectively graduate to the primary school (Years 3-6) where they can read to learn, rather than learn to read, this job having already been done in the 'infants' school'.

Second, there is a clear need to implement a Response to Intervention (RtI) model to guide instruction in the K-2 years. In this model, universal instruction is provided to whole classes in basic skills based on scientific evidence-based best practice. (What this entails specifically in terms of literacy instruction is described below.) This is known as Tier 1 instruction and, if followed properly, should ensure that 75-80% of students progress at an acceptable rate. Continual monitoring of student progress by the classroom teacher will allow the identification of students who are struggling and in need of greater, more intensive support. So-called Tier 2, small group instruction is then provided for,

say, this bottom quartile of students (as compared with national norms), again based on evidence-based best practice using methods, procedures and programs of proven efficacy. Tier 2 support can be provided by trained para-professionals (such as a SLSO – Student Learning Support Officer in New South Wales – under the supervision of a Learning and Support Teacher (LAST)). The small number of students who are still seen to be struggling, following a period of rigorous Tier 2 small group instruction (estimated to be about 5%), are provided with Tier 3, one-to-one, individual instruction with a reading specialist to get them back on track. By these means, it is possible to ensure that all students in the class progress to an acceptable standard in the learning of basic skills. At most, only 1-2% of students are likely to need ongoing individual specialist support which is more readily provided when the needs of the vast majority have been met.

Third, while not being convinced of the automatic benefits accruing to the implementation of smaller class sizes in general, we nevertheless propose that any additional funding available from Gonski or otherwise, be spent on reducing class sizes in the K-2 years only,to allow adequate preparation in the basic skills of language, literacy, and numeracy that underpin all subsequent education. Additionally, such funding could be deployed in the provision of trained paraprofessionals to work under the supervision of early years teachers. The aim would be to ensure that an adult:child ratio of 1:10 or fewer is achieved for the early years of schooling.

Fourth, it has now been established beyond doubt, by three national reviews in the USA, Australia and the UK, that effective early literacy instruction should focus on the 'five big ideas': phonemic awareness, phonics, fluency, vocabulary and comprehension. These five big ideas underpin the Simple View of Reading (SVR) i.e. that reading comprehension is the product of simple decoding and listening comprehension. While, arguably, there has been reasonable emphasis on some of these 'five big ideas', effective phonics instruction has been neglected in favour of so-called 'whole language' (aka 'balanced literacy') approaches that have clearly been shown to fail for far too long. We advocate for scientific evidence-based reading instruction which shows beyond doubt that phonics is a necessary, but not of course sufficient, condition for learning to read. While there is plenty of public comment about how widespread the teaching of phonics is in Australian schools, our belief and experience is that this is done less well than it needs to be to ensure that the vast majority of children become good readers, spellers and writers. We support the introduction of the proposed Year 1 Phonics Screening Check to ensure that effective phonics teaching is taking place and that children are acquiring these necessary skills.

Fifth, and finally, we need to consider the role of pre-school education. This is an important part of the educational landscape, particularly when we consider how differing pre-school experience can impact on the effect of schooling subsequently. Children come to school with vastly different life experiences including their levels of knowledge and skill that make literacy learning more or less difficult. We shall probably never be able to level the playing field sufficiently so that all children start from the same basic level of proficiency but we can do much to ensure that children from less advantaged backgrounds start school with more of the background knowledge and precursor skills that their more advantaged peers absorb from their home environments. The seminal work of Betty Hart and Todd Risley has provided us with a stark reminder of the vast differences in the language learning environments of children from advantaged backgrounds compared with their socially disadvantaged peers. All children from more deprived backgrounds need ready access to quality pre-school education for at least the year prior to starting school.

It is our contention that, if the issues raised above were to be implemented, then it would not be unreasonable to expect that significant progress will be made on the road to achieving educational excellence in Australian schools.

Note: This editorial is an edited version of the submission we made to the 'Review to Achieve Educational Excellence in Australian Schools'.

Emeritus Professor Kevin Wheldall AM and Dr Robyn Wheldall, Joint Editors

What we've been reading

At MultiLit, we are not only interested in teaching reading but we are also avid readers ourselves. In this regular feature, we ask members of the editorial team what they've been reading recently and to share their thoughts with our readers.

Kevin Wheldall

If you liked *My Name is Lucy Barton*, I'm sure that Elizabeth Strout's new book *Anything is Possible* will deliver for you. (Lucy Barton returns for a cameo role in this new book, by the way.) I've also recently read an earlier work, *Abide with Me*, confirming her place in my pantheon of much loved writers. Sadly, I was not so impressed with *Vinegar Girl*, a retelling of *The Taming of the Shrew*, by Anne Tyler, author of *The Accidental Tourist* among many others, and usually another firm favourite of mine. But this time … not so much.

The late Mark Colvin's autobiography, *Light and Shadow: Memoirs of a Spy's Son*, was also a bit of a disappointment, promising much but delivering little. He was indeed a splendid journo but this book was, well, a bit dull, to be frank. We did not really learn much about Colvin or his glamorous father the spy but, rather, were treated to a series of not very interesting anecdotes of life on the road as a foreign correspondent.

Having lived through the period and having been close to UK politics at the time, I was both fascinated and disturbed by John Preston's account of the Jeremy Thorpe affair in *A Very English Scandal*. Having met some of the key players, I was frankly horrified to read of the way that the English establishment closed ranks to protect one of their own and, of course, themselves.

Other books I enjoyed and admired were Irene Nemirovsky's account of her life in occupied France in her unfinished *Suite Francaise* (unfinished because she was murdered by the Nazis) and Ceridwen Dovey's short story collection, *Only the Animals*. Her story 'Red Peter's Little Lady', in particular, is up there with Guy de Maupassant. Oh, and I read *Kestrel for a Knave* (on which the film Kes was based) by Barry Hines for the first time. I know that high school English teachers love it but I seriously doubt whether their students would be quite so enthusiastic; long on description and dialogue but short on action and plot progression.

Sarah Arakelian

My recent reading has included books with a historical focus, both fiction and non-fiction. *The Invention of Wings* by Sue Monk Kidd was an interesting read, based on the life of historical figure Sarah Grimke and her role in the abolition of slavery. I also enjoyed reading Roland Perry's biography *Celeste*. Drawn from the diary and memoirs of the French Countess Celeste de Chabrillan, it is difficult not to feel inadequate next to the achievements of this brilliant woman.

Some books that I am currently reading include the second book in Diana Gabaldon's Outlander series on the battle of Culloden and I thoroughly enjoyed *The Big Over Easy* by Jasper Fforde many years ago so I am now also reading *The Eyre Affair*.

Alison Madelaine

I have continued my reading of mysteries set in Australian small towns with *An Isolated Incident*, by Emily Maguire. Other books I have enjoyed recently are *The Underground Railroad* by Colson Whitehead, *The Miniaturist* by Jessie Burton, *The Goldfinch* by Donna Tartt, and *The Trap* by Melanie Raabe. After being on my 'To Read' list for many years, I finally read *The Handmaid's Tale* by Margaret Atwood (and enjoyed the recent TV series even more). One particularly enjoyable read, and not the sort of book I would usually read, was *The Art of Racing in the Rain* by Garth Stein. This is a story told from the perspective of a dog! Bedtime reading to my son has included Aaron Blabey's (of *Pig the Pug* fame) *The Bad Guys* series and some Roald Dahl (*The Magic Finger*, which I had never read before, and *The Twits*).

Robyn Wheldall

My grandson was reading *Snow Falling on Cedars* by David Guterson for school and so I thought I would reread it so that we could discuss it prior to his Year 11 exams. Well, his exams came and went and we had about a two or three sentence discussion about it because I was still wading through it! I think it's beautifully written and the language wonderfully evocative but it just seemed too darn slow. Anyway, I put it to one side to dip into a bit of Alexander McCall Smith for light relief. I had only read one of his books previously but I picked up a copy of *The World According to Bertie* – one of the 44 Scotland Street series – that was hanging about when I went away for a weekend. I loved it and really enjoyed some laugh out loud moments which is pretty rare for me when I'm reading. I thought the character development was fabulous and will be making another visit to 44 Scotland Street in the future. I have also just finished reading *The Museum of Words* by Georgia Blain, the heartbreaking memoir of 'language, writing and mortality' that she wrote in the final year of her too-short life. It feels like a sacred space that the author allows the reader to come into and I marvel at the generosity of spirit that is expressed in her words. It is a very sad and stranger than fiction tale of three women writers facing death. It's tragic and uplifting at the same time. Read it when feeling strong though. I am now back to *Snow Falling on Cedars*, determined to finish it and appreciate it.

Meree Reynolds

The books that I have been reading lately have all been recently released books by Australian authors whose works I have read and enjoyed previously. I have just finished reading *The Choke* by Sofie Laguna about a young girl growing up in deprived circumstances who experiences domestic violence. Her story is heartbreaking and this is a book that I'm unlikely to forget. I have also read *Force of Nature* by Jane Harper, whose first book *The Dry* is a favourite of mine. *Force of Nature* is also a great story in the detective novel genre and it held me captive until I put it down. Another book that I read and enjoyed during the last few weeks is *Whipbird*, a story by Robert Drewe about a family reunion. Although it took me a while to become acquainted with the many characters, once I was partway through the story I was hooked. It has a really unexpected climax that I am still reflecting on.

What's age got to do with reading?

Kevin Wheldall

Molly de Lemos

Craig Wright

Expressing reading ability in the form of a 'reading age' is a common practice within schools and in research on reading. Reading age is, perhaps, particularly attractive by virtue of its simplicity: when compared to chronological age it appears to indicate how far behind or in front of the 'expected' level the student is reading, it allows quick comparison of the reading levels of multiple students, and allows teachers to understand how much correction has to be made to the curriculum for students who have a delay in reading age. This article will show that, despite its apparent attractiveness, the concept of reading age is fundamentally flawed. (Some of these issues have been raised before in the past (Alexander & Martin, 2004; de Lemos, 2000; McNab, 2007; Wheldall & Beaman, 2000) but very little attention has been paid to their implications.)

How reading ages are constructed

First, let us look briefly at how reading ages are typically constructed. The developers of a new test will seek to obtain performance data on their new measure from an ideally large and representative sample of students across the age range that the test aims to cover. The sample is divided into a series of age groups, usually covering a range of about 3 months to 6 months, depending on the age range covered by the test (e.g., 7:0 years – 7:2 years, 7:3 – 7:5, and so on). The average raw score of each of these age groups is calculated, and this average score is converted to a 'reading age' based on the mid-point of the chronological age of the age norm group. For example, if the age range of the age norm group is 7:0 to 7:2, and the mean raw score of the age norm group is 48, then a raw score of 48 would equate to a reading age of 7:1. The same procedure is used for all the age groups in the standardisation sample. The raw scores are then plotted against age, with age (the midpoint of each age group) on the horizontal axis and the average raw score of each age group on the vertical axis. A smooth line is then drawn linking these points. The raw score corresponding to each age in terms of years and months can then be estimated from this smoothed graph. Note that the number of years of instruction the children have received is not taken into account in the construction of reading ages.

Problems with reading age – variability

So, what's wrong with reading ages obtained in this way? First, there is the problem of variability of performance and hence in raw scores for each age group. The reading age is based on the average score for the age group but some students will read better and score higher and some will read worse and score lower. For example, some children in a typical Year 4 class will score at a level more typical of Year 1 or Year 2 students while others will score at a level more typical of Year 5 and Year 6 students.

The latest results of the National Assessment Program, Literacy and Numeracy (NAPLAN) for reading in 2016 for Year 3 and Year 5 illustrate this point (ACARA, 2016). The average scaled score for Year 3 students was 425.6 (standard deviation = 85.6). For Year 5 it was 501 (standard deviation = 77.1). From our knowledge of the normal distribution ('the bell curve'), it can be estimated that roughly 20% of the Year 3 students scored at the average level or better for Year 5, whereas about 20% of Year 5 students scored at the average level for Year 3 or worse. In other words, the variability in reading performance for students within grade (year) is very large indeed, and tends to increase with age. (An illustration of the variability in the spread of scores with age and the overlap of scores at adjacent age levels is provided by McNab (2007), who showed the expected distribution of scores at each age level as a series of overlapping bell curves based on a normal distribution.)

Problems with reading age – different meaning at different ages

A second problem with reading ages is that the significance of a discrepancy between chronological and reading age changes depending on the age of the student. Take data from the Neale Analysis of Reading Ability 3rd Edition (NARA III; Neale, 1999), a test that until recently was widely used in Australia, as an example. A student aged 7:6 halfway through Year 2 whose reading age is 18 months below her chronological age is a very poor reader indeed. The student's score on the Accuracy part of the Neale is equivalent to ~1% of their grade peers. That is, better than only 1% of students in Year 2. In contrast, a student aged 12:6 in Year 7 whose reading age is 18 months below his chronological age is actually an average reader (equivalent to 27% of his peers).

Problems with reading age – reading is related to years of instruction, not age

The concept and method of determining reading age depends upon the assumption that age within grade is an important determinant of reading ability. It is certainly true that reading performance increases with grade level. However, older students within a given grade are, on average, not better readers than the younger students in the same grade.

Across the primary school years, reading performance correlations appear to be as strong or stronger with grade or year level (i.e., years of instruction) than with chronological age. Further, correlations between measures of reading performance and chronological age within grade tend to be small and insignificant.

Some years ago now, we looked at the results for reading from the Basic Skills Test (BST) in New South Wales that preceded NAPLAN. The BST used to be administered to all primary school students in state schools and to many students in the Catholic and independent sector schools in Years 3 and 5 in August of each year. The literacy component tested students' understanding of a range of written texts used in the primary key learning areas. Actual chronological age of the child was not collected as part of the BST testing regime and so calculation of correlations between age and BST score was not possible. However, students taking the test were required to indicate on the test protocol whether for Year 3 they were aged under eight years (and very few were), aged over eight up to nine years, or aged over nine years. Similarly, Year 5 students had to indicate whether they were aged under 10 years (again very few were), aged over 10 up to 11 years, or aged over 11 years. Given that the BST was administered to almost all students in Year 3 and Year 5 in the state, the numbers in these samples are very large and approach, in effect, population parameters.

If literacy performance is correlated with age within grade then we would expect to observe appreciably higher BST

mean scores in the older age group than in the lower age group within each grade. This was not the case for any literacy measure for Year 3 or Year 5 in any of the three years studied (1998 to 2000). For example, consider the means for Year 5 students for reading in 2000. The mean score for the 42,254 10-year-olds was 56.6 whereas the mean for the 17,314 11-year-olds was 55.8. This virtual population based study carried out over three successive years provided no evidence for any association between age and reading performance within grade.

By way of further illustration, BST performance data were collected in the context of a study relating the Wheldall Assessment of Reading Passages (WARP; Wheldall & Madelaine, 2013) with the BST (Madelaine & Wheldall, 2002). Chronological age data were available for a sample comprising 65 Year 3 students and 58 Year 5 students. Moreover, this sample of students was shown to be highly representative of the state population as a whole in terms of BST performance. (The average scores for the school on BST literacy were shown to be very similar to State averages at both Year 3 and Year 5 levels consistently over several years.) For Year 3 students the BST literacy measure was shown to correlate with age at 0.16, whereas for Year 5 students it correlated at 0.15. The correlations between the WARP and chronological age for these two samples were 0.07 for Year 3 and 0.26 for Year 5: no more than 7% of the variability in scores, at best, was attributable to age.

In sum, there is little or no relationship between age and reading performance within grade. Correlations with age across grades are the result of increasing years of instruction, not maturation. While learning to talk is a developmental process, reading is not. Reading performance is largely a function of the amount and quality of instruction received. Given that this is the case, it probably makes more sense to relate reading performance to years of instruction received rather than to chronological age when comparing children regarding their reading ability.

Examples of how reading age is (mis)used

Two students in a Year 4 classroom, Steve (age nine) and Mark (age 10) are both tested as having the same reading age of 9:6. We would commonly claim that Steve is six months ahead in reading while Mark is six months behind, and that the two students are a year apart in terms of reading performance. Yet they are both in the same class, they have both experienced the same amount (four to five years) of reading instruction, and they are both reading at the same absolute level as measured by the raw score of the reading test (given that reading age is simply a reflection of raw score). Why would we expect them to be performing differently just because they differ in chronological age?

Here is another example. Jenny in Year 4 is 9:0 but has a reading age of 8:6. Sarah is aged 10:0 but has a reading age of only 8:0. Being 'only six months behind', Jenny would still typically be regarded as being within the average range of performance for her age. She is unlikely to be seen as a cause for particular concern. But Sarah is perceived as two years behind what we would expect for her age and would therefore typically be considered to be (by definition) a low-progress reader and a very real cause for concern. Yet they are both in the same year at school, have experienced the same amount of reading instruction over the past five years, and are only a few points different in terms of level of absolute performance as indicated by raw score on the reading test.

Link between age-based reading ages and grade-based stanine scores

The extent to which relatively large differences in reading age can still be within the 'average' range of scores according to the expected normal distribution of scores can be illustrated by looking at the range of reading ages that fall within stanines 4, 5 and 6 on the 9-point stanine scale. These stanines correspond to standardised scores ranging from 89 to 110, in which 54 per cent of scores would normally be expected to fall. The norms for the NARA III (Neale, 1999) provide both reading ages, based on age norm groups, and percentile and stanine scores, based on norms for 'years of schooling'. From the norm tables for this test the reading ages corresponding to each stanine level for each year of schooling can be identified.

The table below provides a summary of the range of reading ages on the Reading Comprehension measure of the NARA III that fall within stanine levels 4 to 6, which marks the average range of scores expected at each year of schooling. This table indicates that in the first year of schooling the differences in reading age that fall within the average expected for this level is less than one year (10 months), but by the fifth year of schooling the differences in reading age that fall within the average expected for this level is just over four years (four years and three months). Thus, as the variability of scores on measures of reading comprehension increase with age, it can be expected that a range

Correspondence between reading ages and stanine scores on the NARA III (Neale, 1999) for students in their first to fifth year of schooling

	First year of school	Second year of school	Third year of school	Fourth year of school	Fifth year of school
Mean age	6:2	7:2	8:2	9:2	10:2
Range in reading age for stanines 4 to 6	6:0 – 6:9	6:3 – 8:3	7:3 – 9:5	8:0 – 11:9	8:5 – 12:7
Range of average scores in years and months	0:10	2:01	2:03	3:10	4:03

of up to four years in reading age can be expected as normal and within the average range of scores expected at older age levels.

False negatives in screening for early reading difficulties

Finally, reading age can be responsible for the identification of false negatives in screening for early reading difficulties; that is, identifying children as average readers when they are actually poor, low progress readers. Take the NARA III (Neale, 1999) as an example. A Year 2 student of seven years of age who is in their third year of school and who has a reading age of 7:0 on the Accuracy part of the test can actually be a poor reader. The student's reading accuracy is better than just 18% of Year 2 students. Yet in using reading ages the examiner/teacher might assume that the student is exactly where they would be expected to be given their age. The obvious problem with this is that the child fails to receive the intervention that is crucial for overcoming written language deficits.

A general comment on age norms versus grade norms

Reading tests tend to be constructed by assessing all students at one point in the school year. Norms are then generated for different age groups by pooling the data for all students in a given age range (e.g., 7:0-7:3, 7:4-7:7 and so on).

This practice causes two problems for test users. First, students in the same age range may actually be in different grades (and we have shown above that reading ability is related to years of instruction rather than to age within grade). This issue potentially makes interpreting age-based norms very problematic. Second, normative data is typically only collected at a single time within the school year. For example, the manual for the NARA III (Neale, 1999) states, "The standardisation took place from September to November 1997 during the final term of the Australian school year". The time at which the normative data were collected can have a big effect on interpretation because reading ability changes so much over the course of a school year; particularly in younger grades. A test for which data are collected in Term 4 is likely to under-estimate the skills of a student tested in term 1 of that year. This problem has led Vincent (1997) to rightly argue that test norms "will only accurately reflect children's attainments at the time of year at which they were obtained. This seemingly obvious point is too often overlooked by test users …"

We suggest that the gold standard for tests should be data collected in each of the four Australian school terms.

Note that these latter concerns apply to all normative scores obtained from tests, not just reading ages. Standardised scores, z-scores, percentile ranks and stanines all suffer from the same criticisms regardless of whether they are normed on the basis of age or on the basis of grade level.

The solution? Create tests that are standardised at separate time intervals over the school year. We suggest that the gold standard for tests should be data collected in each of the four Australian school terms. A less acceptable alternative would be data collected in the two Australian semesters; preferably at the mid-point of each semester to minimise false positives and false negatives at the beginning and end of each semester period respectively. (Some test developers have begun to take this

problem on board. The Test of Word Reading Efficiency (TOWRE; Torgesen, Wagner & Rashotte, 2012) and the Wechsler Individual Achievement Test (WIAT-III; Psychological Corporation, 2016) both provide grade-based norms for two time points in the academic year.)

Given the increasing difficulty and expense incurred by test publishers in providing norms for reading and other performance tests, perhaps we should not hold our breath. In the meantime, we suggest that test users think critically about the quality of normative data available for any given test before purchasing or using the test. We also urge test users to interrogate the scores obtained from any test by considering how representative the normative data are for the student in question (e.g., by considering the time of year at which the data were collected, the number of students in the sample and whether number of years of instruction has been accounted for) before making conclusions and high-stakes decisions. For researchers and clinicians seeking to measure progress across time, we suggest using raw scores rather than standardised scores or reading ages.

References

Australian Curriculum, Assessment and Reporting Authority (ACARA; 2016). *NAPLAN Achievement in Reading, Persuasive Writing, Language Conventions and Numeracy: National Report for 2016*. Sydney: Author. Retrieved from https://www.nap.edu.au/results-and-reports/national-reports

Alexander, J. R. M., & Martin, F. (2004). The end of the reading age: grade and age effects in early schooling. *Journal of School Psychology, 42*, 403-416. doi:10.1016/j.jsp.2004.06.003

de Lemos, M. M. (2000). *Group reading test II: Australian norms supplement*. Camberwell: ACER Press.

Madelaine, A., & Wheldall, K. (2002). Further progress towards a standardised curriculum-based measure of reading: Calibrating a new passage reading test against the New South Wales Basic Skills Test. *Educational Psychology, 22*, 461-470. oi:10.1080/0144341022000003132

McNab, I. (2007). Making sense of reading ages. *LDA Bulletin of Learning Difficulties Australia, 39*(2&3), 4-5. Retrieved from https://www.ldaustralia.org/lda-publications.html#bulletin

Neale, M. D. (1999). *Neale Analysis of Reading Ability (3rd ed.)*. Melbourne: Australian Council for Educational Research.

Torgesen J. K., Wagner R. K., & Rashotte C. A. (2012). *Test of Word Reading Efficiency (2nd ed.)*. Austin, TX: Pro-Ed.

Vincent, D. (1997). Assessment by classroom teachers. In R. Beech & C. Singleton (Eds.), *The psychological assessment of reading* (pp. 27-48). London: Routledge.

Psychological Corporation (2016). *Wechsler Individual Achievement Test (WIAT; 3rd ed.)*. Sydney: Pearson.

Wheldall, K., & Beaman, R. (2000). *An evaluation of MULTILIT: 'Making Up Lost Time In Literacy'*. Canberra: Department of Education, Training and Youth Affairs.

Wheldall, K., & Madelaine, A. (2013). *The Wheldall assessment of reading passages (WARP) manual*. Sydney: MultiLit Pty Ltd.

Emeritus Professor Kevin Wheldall AM is Chairman of MultiLit Pty Ltd and Director of the MultiLit Research Unit. You can follow him on Twitter (@KevinWheldall) where he comments on reading and education (and anything else that takes his fancy). He also has a blog, 'Notes from Harefield: Reflections by Kevin Wheldall on reading, books, education, family, and life in general': www.kevinwheldall.com. Email: kevin.wheldall@pecas.com.au

Dr Molly de Lemos AM is a psychologist and former educational researcher with the Australian Council of Educational Research. While at ACER she spent some time on the development and norming of educational and psychological tests. She is the author of the report, Closing the Gap between research and practice: Foundations for the acquisition of literacy, *published by ACER, and is a former President of Learning Difficulties Australia (2013/2014). Email: delemos@pacific.net.au*

Dr Craig Wright is a psychologist and Clinic Director at Understanding Minds and Adjunct Research Fellow in the School of Psychology at Griffith University. He avoids social media but can occasionally be found blogging at www.understandingminds.com.au/blog where he writes about issues relating to developmental and learning disorders. Email: craig@understandingminds.com.au

A journey to the dark side: from phonics-phobic to phonics fanatic

Anne Glennie

I don't remember how I learned to read, probably because I didn't struggle with it. I was lucky. I grew up on a council housing estate – or scheme – as we prefer to refer to it in Scotland, but I had everything that we would now consider to be the ideal 'pre-five home learning environment'. My many memories include tent building in the living room, making mud pies and petal perfume, digging up worms, and swinging endlessly on my blue swing in the garden. I spent a lot of time outside, with friends, or with my two imaginary dogs – Toby and Sheba. But I also remember books. I had my very own bookcase which housed my Ladybird library, in my own playroom. I would spend hours reading them, sometimes even in the middle of the night, by the landing light.

My mum read to me too. *The Tiger Who Came to Tea* became an instant favourite, but so did another less well-known story: *A Brother for Momoko*. I was four when my mum read this to me (preparing me for the fact that I was no longer going to be an only child). I remember the story, the pictures, and my mum's voice – her intonation when she read to me. When the baby comes home from the hospital, he is 'tiny, soft and warm'. And so was my brother. He moved into my playroom, and despite a vigorous campaign, my parents called him Brian, instead of my choice: Toby.

My love of books and reading was nurtured at school in every class. But my favourite teacher, Mrs Clarke, is the one that introduced me to *Charlotte's Web* and *A Gift from Winklesea*. It was these shared reading experiences that propelled me into teaching. I wanted to recreate those magical, memorable moments and share the power of words and stories with every child in my class.

This romantic notion was quickly quashed. When I started teaching, the curriculum at the time in Scotland was the now abandoned 5-14. Strict timetables dictated how many minutes were to be devoted to each subject area per week. I remember asking a colleague "But when do we get to do the class novel?" Only to be told. "We don't do that anymore." Undeterred, I simply used the ten 'extra' minutes per day for this purpose. I think I've read *A Gift from Winklesea* to every class I've ever had, regardless of age or stage; it's a great story. We should never underestimate the power we have as teachers, to influence not just learning, but entire lives. Thank you, Mrs Clarke.

Today, I'm no longer in the classroom, but I still get to share my passion for reading through my work as a consultant. I developed Reflective Reading, a methodology that focuses on comprehension, higher order thinking skills and reading for pleasure, with practical ideas and materials that teachers can use in the classroom. However, I began to realise that although I could talk forever about engagement, enjoyment and 'getting under the skin' of a text, I

lacked real knowledge and expertise in the fundamentals of reading acquisition. If someone was to ask me, "How should we teach children to read?" I'd be lost. I didn't know the 'right' answer.

As a teacher, there can be nothing more shameful than admitting that you don't know how to teach a child to read. While in the classroom, it was an area I'd managed to avoid – I was a self-styled 'upper stages' teacher. Partly because I love those stages and the opportunity for in-depth learning and reading, but partly because I was afraid of the huge responsibility of teaching a class of younger children to read. How had I managed to qualify as a primary teacher without this essential knowledge? For a while, I kept my shameful secret to myself, believing that I must have slept in the day 'Teaching Reading' was covered in lectures. I couldn't ignore though, the fact that I had just identified a major personal, professional development need. If I was training teachers, I needed to be sure that whatever I was telling them, whatever questions were being asked, that I was providing the correct answers.

Three years ago, as part of my quest to find out how to do my job, I read another book that changed my life: *Early Reading Instruction: What Science Really Tells Us About How to Teach Reading* by Diane McGuinness. I found out about it, quite by chance, online. I'm a keen Twitter user; it keeps me up to date with education news, motivational quotes and cat videos. It's also brilliant for pedagogical debate; night or day the fires of 'the reading wars' are being fanned, as someone somewhere will be arguing about phonics.

Phonics wasn't something I had previously thought a lot about. It wasn't necessary to my practice in Primary 6 or 7 (Year 5 or 6) – or so I believed. The few opinions I had about phonics, had mostly been absorbed though listening to wiser colleagues and teachers, staffroom discussion, and Michael Rosen. Type 'phonics' into the search engine of my brain, and the result would be phrases such as 'barking at print', 'first, fast and only', 'one size doesn't fit all', 'there's more to reading than phonics' and 'drill and kill'. I certainly didn't want to have anything to do with a pedagogy that would destroy the very thing I was trying to achieve – a love of reading.

But when I read Diane McGuinness's book, the scales fell from my eyes. This was a game-changer. Here was undeniable, compelling, unequivocal scientific proof that systematic phonics was the most effective way to teach all children to read. Indeed, I was late to the party; three major international inquiries into reading had already established this conclusion – one of them being the Rose Review (*Independent review of the teaching of early reading,* Final Report, Jim Rose, March 2006).

Everything I'd previously believed about phonics was wrong. Of course 'there is more to reading than phonics'. Advocates of the approach not only want children to be able to read, for pleasure and for learning, but phonics is a means to an end – a way of ensuring that all children could access text. Comprehension is the ultimate goal, why else do we read, if not to understand the writer's message? But to understand the message, first you have to be able read it. I now believe that it takes three things to build a reader: motivation, meaning, and mechanics; none is sufficient on its own. It doesn't matter how many wonderful books you surround children with, or how engaging and exciting you make reading – if they can't decode the words on the page, then they will fail. No one can read for pleasure if they can't read.

I also discovered that I wasn't the only one who had missed out on instruction in the nuts and bolts of reading instruction.

The sad reality is, that phonics has a massive PR problem, perpetuated by people who are no doubt well-meaning but misinformed. When these people are high-profile academics, authors, and journalists who are openly anti-phonics, their influence can be difficult to overcome. In Scotland, despite constant talk of how teaching should be 'research-informed', our own curriculum does not take this on board. With regards to beginning reading instruction, Scotland is firmly in the mixed methods camp. We do teach phonics … alongside sight words, letter names and a myriad of unhelpful multi-cueing strategies and a cupboard full of 'look and say' books. Whole language rhetoric is alive and well, with children being encouraged to "look at the first letter", "look at the last letter" (yes, really!) and "look at the picture and guess". (Pictures and context of course may be used to assist comprehension – just not for reading or guessing individual words.) The most helpful advice of all – "sound it out" – appears only towards the end of a long list. Reading is not about memorisation, nor is it about guessing. Simply teaching children about our language, the alphabetic code and how it works, means that all the clues required for reading are right there, in the words on the page. Knowledge of letters and sounds, coupled with the skills of sounding out and blending – or phonics – is the only strategy beginning readers need to get the words off the page. It's the one we use as adults too, when we're faced with a word we don't know. (Try reading this if you don't believe me: atelerix albiventris – which is the Latin name for an African pygmy hedgehog, in case you were wondering.) And as if that wasn't enough, that same letter/sound knowledge is what we need for

spelling too; systematic synthetic phonics delivers for both reading and spelling – it's a win-win.

The real irony though, is that one of the main studies into the effectiveness of systematic synthetic phonics was carried out here in Clackmannanshire, by Johnston and Watson. This study has gained international interest and acclaim, it features in Diane McGuinness's book, and six pages of the Rose Review cover what Sir Jim Rose and his team discovered when they visited Scotland. We do not appear to be learning the lessons, even from our own research.

I also discovered that I wasn't the only one who had missed out on instruction in the nuts and bolts of reading instruction. I regularly ask teachers on my courses if they were taught how to teach reading during their teacher training. Shockingly, the majority of teachers in Scotland have had no input on the subject of beginning reading instruction or phonics. To be clear, this is not the fault of teachers. For me, the blame lies with teacher training institutions, Education Scotland and the Scottish Government. I have written to my Member of the Scottish Parliament, our previous Education Secretary and the GTCS (General Teaching Council for Scotland) about this matter, to no avail.

My new passion for phonics has left some of my colleagues puzzled. Some have chosen to distance themselves from me, uncomfortable with my 'controversial' approach to teaching reading. Working outside the Scottish education system, as an independent consultant, means I am free to challenge Education Scotland and our approaches to literacy teaching and assessment. This is not a method I'd recommend if you're looking to make friends, rather than enemies. Nevertheless, I do believe that, however difficult, the path I have chosen is the correct one.

Yes, I am a phonics fanatic. I have become evangelical. I can't help it. People say that there are no silver bullets in education, but I think systematic synthetic phonics comes pretty close. A method of teaching reading that has scientific backing and is proven to be effective for all children – especially those who are disadvantaged because of socio-economic factors, have English as a second language, or struggle with dyslexic-type difficulties – is one worth fighting for.

Knowing that the research is on my side gives me confidence. Believing that no child should have to experience reading failure, and all that entails for their future life chances, is what gives me the courage to keep going. I may have crossed over to what many view 'as the dark side', but for the first time in my teaching career, I feel truly enlightened. My only wish is that I converted years ago.

Further reading

Early Reading Instruction: What Science Really Tells Us About How to Teach Reading by Diane McGuinness

Why Our Children Can't Read: And What We Can Do About It by Diane McGuinness

Phonics and the Resistance to Reading by Mike Lloyd-Jones

For easy access to research and summaries on these topics

www.thelearningzoo.co.uk
Anne's blog and website

www.iferi.org
The International Foundation for Effective Reading Instruction

www.rrf.org.uk
The Reading Reform Foundation UK

www.dyslexics.org.uk
Susan Godsland's informative, no-nonsense website

Originally published in the *NATE Primary Matters magazine*, Summer edition

Anne Glennie is a literacy consultant and trainer in all aspects of reading. She is a committee member of IFERI (The International Foundation for Effective Reading Instruction) and the RRF (The Reading Reform Foundation). Twitter: @anneglennie

Code-teaching or code-breaking?

Dianne Murphy

Code-breaking is what you do when you don't know the code.

There are two main approaches to teaching reading, which can be summarised as code-based and meaning-based. Code-based teaching works on the premise that there is a known, culturally shared, symbolic code. This written code represents another, spoken code. Teaching the relationship between these two codes is the focus of systematic synthetic phonics. Because it is not a natural process to interpret written symbols, this aspect of language must be taught systematically and explicitly to ensure that all readers not only acquire, but also master the skill. Once the code is mastered, the meaning of the text is available to the student and the cognitive benefits of reading accumulate.

The meaning-based approach to reading, exemplified in whole language and its descendant Reading Recovery, takes a code-breaking rather than a code-teaching approach. The text is approached as a puzzle to be solved, analogous to deciphering an intercepted wartime message. The code-breaker might consider the participants: from whom? To whom? Then there is the question of purpose: why was this written? The cracker looks for clues in the medium, or in other related messages that might have been discovered. Repeated words or phrases are checked. Reasoned guesses are made, checked, confirmed or disconfirmed. The hope is that eventually a pattern will emerge. The more that is known, the fewer possibilities there are for what the remaining text might mean. Assuming that the code is broken, the message emerges and its importance can be judged. Then it is on to the next message. Hopefully the lessons learned from the previous code-breaking exercise will help with this one.

The three fundamental differences between these approaches are accuracy, speed of return and efficiency. In the case of the code-teaching approach, mastery of the code, built with practice, will inevitably lead to greater accuracy than a less systematic approach. In terms of speed of return, the code-teaching approach may delay the deciphering of some messages – but only in the short term. The problem is overcome by efficiency: once the code is mastered, a great many texts can be deciphered quickly, and the intelligence gathered can be put to use.

On the other hand, while the code-breaking approach may yield some meaning early, the context, guess, confirm sequence is inefficient and often inaccurate. At a certain point (usually by the end of Year 4), readers need reliable information at their fingertips so that they can work with it. This stage is called 'reading to learn' instead of 'learning to read'. And it is at this stage that the inefficiency and inaccuracy of the code-breaking approach becomes apparent. Students taught this way have frequently not been taught to fluency, and the strategy of guessing and predicting has left them never being really sure what was in the text. While their teachers may feel pleasure that the students are "constructing their own meaning from texts" the students tend to feel like failures – because they are failing.

The code-breaking approach is unsupportable as an educational practice because:

- It wastes children's time, teaching them to use code-breaking strategies when we already know the code.
- As educators we have a responsibility to pass on our knowledge – not to require children to "discover" it.
- After a few years, the poor guessing strategies of code-breaking prevent children from accessing the knowledge that schools (and society) expect them to be able to find in written texts.
- The limitations of poor reading hinder the development of language skills, thinking skills, vocabulary and curriculum knowledge.

Regrettably, arguments about the merits of the two approaches will no doubt continue. Ideals about human nature, society and learning have deep roots in political and philosophical streams that are not easily severed – not even by the sharp blows of logic and empirical evidence. Teacher education institutions seem particularly prone to idealising code-breaking by positing that the code is not teachable; see John Walker's Literacy Blog (www.thereadingcentre.com/2014/02/13/prate-and-lyle/) for a cogent response to a recent example of misconceptions about the code.

For our part, the code-breaking approach of whole language has produced an unending stream of children reaching secondary school in need of help. We look forward to the day when logic prevails, and good teaching at primary school level makes Thinking Reading unnecessary.

Dianne Murphy is the author of Thinking Reading, a specialist reading intervention for secondary schools in the UK. She holds a degree in Education and Linguistics, along with two post-graduate diplomas in special education and another in English language teaching. In 2015 she won a Teach First Innovation Award to assist her to scale-up the programme. In 2017 Thinking Reading won Innovation Partnership status with Teach First to continue to widen its impact. Dianne works to disseminate research about good instructional practice in reading through social media, blogging and speaking.
Twitter: @ThinkReadTweet and @ThinkingReadin1
Email: dmurphy@thinkingreading.net
Blog: https://thinkingreadingwritings.wordpress.com
Web: www.thinkingreading.net

Teacher training includes almost nothing on how children learn to read, why some find it so difficult, and what can be done about this, even though research by reading scientists has discovered a great deal about these matters.

– Max Coltheart

Explainer:
Phonics is not a method of reading, it is a method of learning how to read

Kevin Wheldall

Pamela Snow

Linda Graham

In a previous explainer about phonics instruction, we discussed the different varieties of phonics instruction that are practised in schools (*Nomanis* Aug 2017, p10), one of which (synthetic phonics) is more effective than the other types more commonly practiced. Specifically, we explained that the term synthetic phonics was not referring to anything artificial, in the sense of the overt teaching of non-words (or pseudowords), but rather referred to the process of synthesizing letter sounds through the word to 'lift the words off the page', i.e. to achieve decoding of the word. In this follow-up article we explain what the real purpose of phonics is.

A common response to the suggestion that there is a need for more explicit, systematic, synthetic phonics instruction in our schools is that phonics is alive and well in Australian early years classrooms. However, in reality, different varieties of phonics instruction are practised in schools, and these are not equally effective for beginning readers. We will focus here on synthetic phonics and the reasons that this is more effective for beginning readers than the other types more commonly practised.

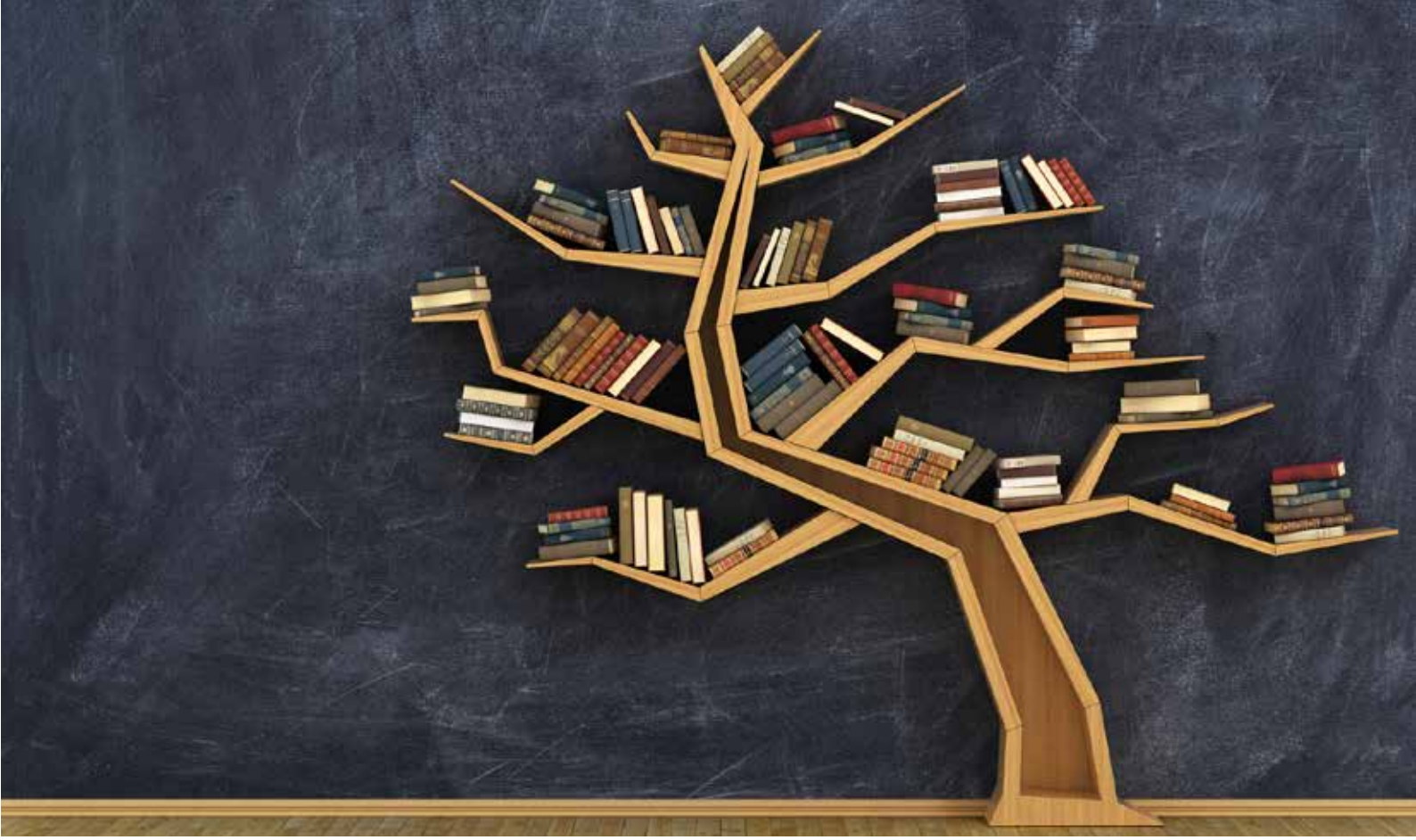
As we have indicated before, synthetic phonics suffers from a bit of an image problem. Part of this relates to the word 'synthetic', which is sometimes interpreted to mean 'fake'. This association has also become confused with the use of non-words (or pseudowords), which are sometimes used to assess children's decoding skills.

The term synthetic phonics does not refer to anything artificial, but rather refers to the process of *synthesizing* the 44 sounds derived from the 26 letters in the English alphabet to decode words. Systematic synthetic phonics, in turn, is a teaching approach in which sound and letter correspondences are introduced early and their associations are explicitly taught, using techniques such as blending, segmenting, deleting and inserting sounds.

But perhaps the most serious and common misapprehension about systematic synthetic phonics teaching (or indeed any phonics teaching) hinges on the fundamental purpose of teaching phonics. Plainly put, phonics is not a method of reading per se. Rather, phonics is a means of learning how to sound out words a sufficient number of times so that words are learned and automatically recognised as wholes.

After a number of repetitions of phonic decoding of a word, the word is learned as a whole and becomes automatically accessible as such. As our banks of words develop, we only need to sound out the words we may not already know; such as 'peripatetic' or 'conquistador', for example. This is as true for adults as it is for children.

If we had to sound out every word phonically every time we encountered it, it would indeed be a laborious and time-consuming business that would hinder our reading fluency and hence our reading comprehension. This is why it is important to



understand the difference between learning to read and the act of reading.

All well and good, you might think, but why then do some children find this a more difficult task than others? Frankly, we do not yet know precisely why this is the case but we do know that there is considerable variation in the ease with which children learn to read words and in turn understand their meaning.

Some children barely seem to need much help. They encounter a word a couple of times and they have it locked down for immediate access going forward. Others might need, say, half a dozen experiences of sounding out the word to get it fixed in their reading lexicon.

And then there is a minority of children who, for whatever reason, seem to need many, many more adult-supported repetitions of phonic decoding strategies before they will become competent readers. Some parents, teachers and professionals choose to call such children dyslexic. Whatever descriptor we employ, we are referring to children who need to exercise their phonic decoding skills on a word far more frequently than is typical before they commit it to their memory word bank. Notably, it is difficult to 'back-fill' essential decoding skills for children who do not have these after three years of formal schooling.

So, if some children need relatively little help to learn to decode words, why should we include systematic synthetic phonics as a critical element in our initial teaching strategy for all children? The answer is that we simply do not know ahead of time just which children will need extra instruction and support and will need many more repetitions to learn words than is typical.

There is an additional benefit from systematic synthetic phonics teaching for the children who appear to learn reading easily, because phonics-knowledge is also the bedrock of spelling. Not all children who learn to read easily necessarily become avid readers and, if they do not have a solid grounding in phonics, they will not be able to rely on sight word memory and could struggle with spelling, despite being competent readers.

To make sure that no children fall through the cracks, therefore, it makes sense to offer explicit systematic synthetic phonics instruction to all children, to get them off to a successful start towards independent reading.

Emeritus Professor Kevin Wheldall AM is Chairman of MultiLit Pty Ltd and Director of the MultiLit Research Unit. You can follow him on Twitter (@KevinWheldall) where he comments on reading and education (and anything else that takes his fancy). He also has a blog, 'Notes from Harefield: Reflections by Kevin Wheldall on reading, books, education, family, and life in general': www.kevinwheldall.com. Email: kevin.wheldall@pecas.com.au

Professor Pamela Snow is Head of the La Trobe Rural Health School, at the Bendigo Campus of La Trobe University. She is both a speech pathologist and registered psychologist and her research interests focus on oral language and early literacy as protective factors, particularly in the lives of vulnerable children and adolescents. Pamela's blog, The Snow Report, can be found at: http://pamelasnow.blogspot.com.au/ and her Twitter handle is @PamelaSnow2. Her publications can be found via her La Trobe University homepage: www.latrobe.edu.au/she/staff/profile?uname=pcsnow

Linda Graham is an Associate Professor in the School of Early Childhood and Inclusive Education, Queensland University of Technology (QUT). Her research focuses on support for students with learning difficulties and the development of severely disruptive school behaviour. She leads QUT's Student Engagement, Learning and Behaviour Research Group (@SELB_QUT) and is on Twitter, a lot. She can be contacted @drlindagraham or by email: linda.graham@qut.edu.au

In support of phonics

Kathy Rastle

New research has confirmed the effectiveness of phonics as a method of teaching reading.

The subject of phonics – the UK government-backed method of teaching reading – is one that still stirs great debate, despite strong and building evidence of its effectiveness. A result of this evidence is that, in England, using phonics instruction is a legal requirement in state-funded primary schools.

Phonics instruction involves intense focus on learning the relationship between letters and sounds. The impact of this method has been measured through a screening check administered to children in Year 1. Year-on-year gains in the percentage of children reaching an expected standard have been impressive – from 58 per cent in 2012 to 81 per cent in 2016.

However, despite this, some practitioners argue in favour of a less-prescriptive approach to teaching reading, consisting of a variety of phonic- and meaning-based skills, such as pictures and sentence context, to guess the meanings of words.

The Language, Learning and Cognition Lab at Royal Holloway, University of London has been investigating reading and learning methods including phonics since 2002. In its latest study, its researchers have shown that helping learners to focus on the relationship between letters and sounds in reading instruction has a dramatic impact on the accuracy of reading aloud alongside improved comprehension.

Researchers assessed the effectiveness of different methods of reading instruction by training adults to read in a new language, printed in unfamiliar symbols, and then measuring their learning with reading tests and brain scans.

Meaning and comprehension

Because phonics focuses on the relationship between print and sound, many people argue that it will do nothing to improve reading comprehension, and may even hinder it. This study is important because it shows that claim is false.

When training focused on the meanings of the new words, learners were far less accurate in reading aloud than when training focused on phonics. In fact, when people focused on meanings, it took them twice as long to reach a good level of performance in reading aloud, and MRI scans revealed that their brains had to work harder to decipher what they were reading.

Importantly, the study also showed that training focused on the meanings of words did not lead to better reading comprehension than phonics training. Those using phonics were just as good at comprehension and significantly better at reading aloud.

Phonics works for all

Some practitioners argue in favour of a 'balanced' approach, consisting of multiple methods in the first stages of learning to read. However, this research suggested that spending time learning the meanings of whole words may have

no benefit, and may actually hinder the learning of the relationship between letters and sounds.

Most practitioners can point to examples of children who have learned to read without explicit phonics instruction. Indeed, in follow-up work, the researchers have shown that some learners will be successful in discovering the regular patterns in written language irrespective of the method of reading instruction. However, most learners won't. The researchers argue that this is why phonics instruction is so crucial. Provided learners start with sound oral language, explicit phonics instruction has the potential to bring all learners to a high level of performance. That is very important for learners with special educational needs. This research agrees with previous findings showing that phonics instruction is appropriate for all learners.

This research contributes to the rapidly growing interest in promoting evidence-based practices in the classroom. The best outcomes for all children will be achieved when such practices are paired with the skill and professionalism of teachers.

Reference

Taylor, J. S. H., Davis, M. H., & Rastle, K. (2017). Comparing and validating methods of reading instruction using behavioural and neural findings in an artificial orthography. *Journal of Experimental Psychology: General*, 146, 826-858.

[This article was originally published in SEN Magazine, *https://senmagazine.co.uk/]*

Professor Kathy Rastle, Head of the Department of Psychology at Royal Holloway, University of London, led the research project discussed above: www.royalholloway.ac.uk/psychology/. She has been researching language and reading for over 20 years, and is interested in understanding how insights from psychology and neuroscience can inform practice in the classroom. She tweets at @Kathy_Rastle.

Those using phonics were just as good at comprehension and significantly better at reading aloud

Children struggle to hear and teachers struggle to teach in new open-plan learning environments

Kiri Mealings

Many of us would remember our days in primary school sitting in a classroom with four walls, 20 to 30 other students, and a teacher instructing us from the front. Recently, however, some schools have been converting classrooms to more open-plan environments, where several classes share the same space. Classes are still divided into class bases of 20-30 students with their own teacher, but all of these classes are in the same room with minimal or no walls separating them, which results in 50, 90 or even 200 children in the one area.

These "innovative learning environments" are emerging largely due to teaching methods now focussing on child-directed learning with the teacher as the facilitator rather than the instructor[1]. These classrooms are thought to better facilitate group work and children's social development. Additionally, they are seen to benefit the teachers by promoting the sharing of skills, ideas and experiences, and by allowing team-teaching which is believed to create a more cooperative and supportive atmosphere[2].

But that's a lot of children in one area, doesn't it get noisy?

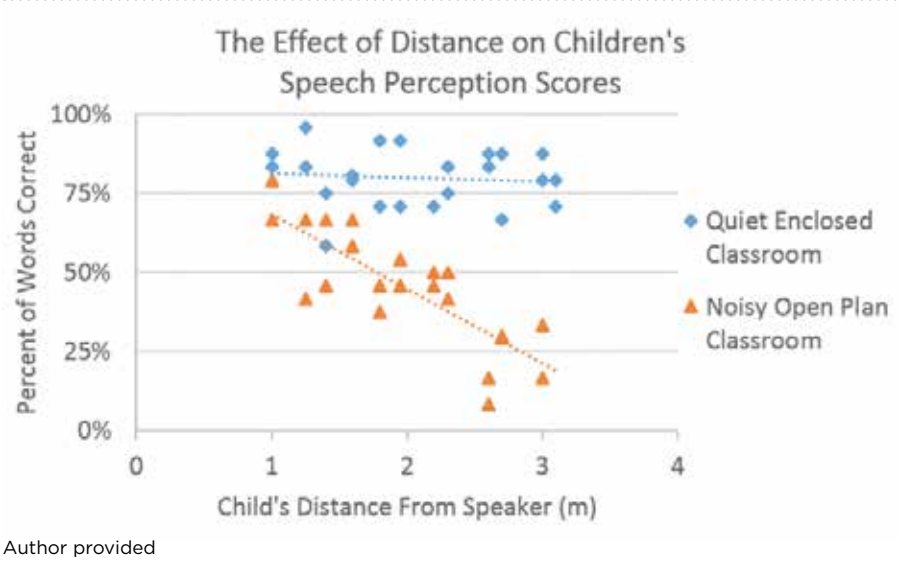
Yes, noise can be a big problem in open-plan learning environments, especially the high noise levels coming from the other classes sharing the same space[3]. This noise is particularly problematic when a class is trying to engage in critical listening activities, which is a vital time for children to be able to hear and learn the new concepts they are being taught. Research shows this direct instruction is essential for young children to learn the basic literacy and numeracy skills first before they can engage in more child-directed learning[1].

Our recent study of four different-sized Sydney schools found that most children were annoyed by the noise coming from the other classes in the open-plan area. Additionally, 50-70% of the children surveyed said they could not hear their teacher very well, or at all, when the other classes were doing noisy group work activities[4].

When objectively assessing 5-to 6-year-old children's speech perception (i.e. ability to hear words in sentences) in these four classrooms, we found that children in the noisiest open-plan classrooms had significantly lower speech perception accuracy and slower response times than children in an enclosed classroom. Distance from their teacher was also a major factor[5]. In the quieter enclosed classroom, children's speech perception scores were consistently high (approximately 80%), irrespective of how far they were seated from the teacher. However, in the noisiest open-plan classroom, children's scores dropped from 75% at the front to less than 25% at the back, and the children in this classroom also took significantly longer to process the sentences[5,6]. These findings are very concerning and likely to severely impact these children's learning. Not only that, but it is exhausting for the children trying to concentrate amid the noise.

What about the teachers?

It's not only the students in open-plan classrooms who suffer. Teachers from the open-plan classrooms we visited were more distracted by noise and found



Author provided

speech communication significantly more difficult than the teachers from enclosed classrooms. These teachers also needed to elevate their voices more and experienced vocal strain and voice problems more often than the teachers in the enclosed classrooms[7]. Some teachers in the open-plan classrooms had to leave the school or even the teaching profession due to vocal health issues.

So what do these findings suggest for open-plan learning environments?

On average, children spend 45-75% of their time at school listening and comprehending, so it is important that the acoustic learning environment enables students to be able to discriminate their teacher's and classmates' speech from other irrelevant noises in the classroom.

Our findings suggest that open-plan classrooms that are unable to control the noise from adjacent classes are not appropriate learning environments for children. Acoustically treated enclosed spaces are much more likely to provide the listening environments needed for children to be able to hear and understand their teacher.

If innovative learning environments are strongly desired, then they need to be purpose-built with proper acoustic treatment and, most importantly, have enclosed spaces or at least operable walls that can be closed when a class needs to engage in critical listening activities. Quiet rooms are also essential in these spaces so children who have particular difficulty working in noisy conditions can quietly work away from the other students. This includes children who have special educational needs, such as attention deficits, hearing impairments, auditory processing disorders, language delays, and English as a second language as they are likely to be even more affected by the noise[8]. Additionally, teachers need to be trained in how to teach effectively in different classroom environments and how to look after their vocal health.

There is a real need for outreach programs to educate teaching professionals, architects, designers, clinicians, parents, and children on the appropriate acoustic conditions for educational spaces and how to achieve them in all schools. This will help enhance children's learning and improve teachers' vocal health and wellbeing.

References

1. Rowe, K. Effective teaching practices for students with and without learning difficulties: Constructivism as a legitimate theory of learning AND of teaching? *Student Learn. Process.* 1-24 (2006).
2. Brogden, M. Open plan primary schools: Rhetoric and reality. *Sch. Organ. Former. Sch. Organ.* 3, 27-41 (1983).
3. Mealings, K. T., Buchholz, J. M., Demuth, K. & Dillon, H. Investigating the acoustics of a sample of open plan and enclosed Kindergarten classrooms in Australia. *Appl. Acoust.* 100, 95-105 (2015).
4. Mealings, K. T., Dillon, H., Buchholz, J. M. & Demuth, K. An assessment of open plan and enclosed classroom listening environments for young children: Part 1 - Children's questionnaires. *J. Educ. Pediatr. (Re)Habilitative Audiol.* 1, (2015).
5. Mealings, K. T., Demuth, K., Buchholz, J. M. & Dillon, H. The effect of different open plan and enclosed classroom acoustic conditions on speech perception in Kindergarten children. *J. Acoust. Soc. Am.* 138, 2458-2469 (2015).
6. Mealings, K. T., Demuth, K., Buchholz, J. M. & Dillon, H. The development of the Mealings, Demuth, Dillon, and Buchholz Classroom Speech Perception Test. *J. Speech, Lang. Hear. Res.* 58, 1350-1362 (2015).
7. Mealings, K. T., Demuth, K., Buchholz, J. M. & Dillon, H. An assessment of open plan and enclosed classroom listening environments for young children: Part 2 - Teachers' questionnaires. *J. Educ. Pediatr. (Re)Habilitative Audiol.* 1, (2015).
8. Anderson, K. Kids in noisy classrooms: What does the research really say? *J. Educ. Audiol.* 9, 21-33 (2001).

This article is based on an article published on The Conversation *on February 10, 2015.*

THE CONVERSATION

Dr Kiri Mealings is a research scientist at the National Acoustic Laboratories in Sydney. Kiri graduated with a PhD at Macquarie University in 2016 for a thesis entitled 'An investigation into how the acoustics of open plan and enclosed classrooms affect speech perception for Kindergarten children'. Kiri's current research interests include auditory processing disorders, classroom acoustics, speech perception, and reading deficits.
Email: kiri.mealings@nal.gov.au

Q and A with … Linda Siegel

Linda Siegel

In this second in a series of interviews with leading authorities in the field of reading and related skills, Kevin Wheldall talks to Linda Siegel.

About Linda

Linda Siegel is the former Dorothy C. Lam Chair in Special Education and an Emeritus Professor in the Department of Educational and Counselling Psychology and Special Education at the University of British Columbia, Vancouver, Canada. She has over 200 publications on early identification and intervention to prevent reading problems, dyslexia, reading and language development, mathematical concept learning, mathematical learning disabilities, and children learning English as a second language.

She has been the President of the Division of Learning Disabilities of the Council on Exceptional Children. In 2004, she was awarded an honorary doctorate from Goteborg University in Sweden. In 2010, she was awarded the Gold Medal for Excellence in Psychological Research by the Canadian Psychological Association. In 2012, she was awarded the Eminent Researcher Award by the Learning Difficulties Association of Australia. She has recently published a book entitled *Not Stupid, Not Lazy: Understanding dyslexia and other learning disabilities*. This book is published by the International Dyslexia Association.

Linda, how did you first become interested in research in reading?

I became interested in reading and reading, spelling and mathematics difficulties when I worked with Bill Feldman, a paediatrician, on cases of students struggling with academics and/or behaviour in school. It was the early 1980s and it was intriguing to me that there could be intelligent children who struggled with reading, spelling, and mathematics. I started a research career to find out more about these children.

Who has most influenced your thinking about reading and why?

The logical positivists and the neopositivists and their emphasis on empirical verification and the importance of definition influenced my thinking about reading and learning disabilities. I worked with Keith Stanovich, and his clear and logical analysis and intriguing analyses of our data were quite enlightening. Max Coltheart and the dual route theory were influential in my thinking about reading and spelling.

What do you consider to be the most important contribution you have made to the scientific study of reading?

In 1989, I published paper documenting the fact that IQ is irrelevant to the definition of learning disabilities.It was quite controversial. However, in addition to examining faulty logic of some assumptions, for example, the discrepancy

definition of dyslexia, the validity of the IQ test, and how we conceptualise reading and reading disabilities, I hoped that it would make services accessible for more children, adolescents and adults.

Could you recommend one of your own books or papers that you consider to be particularly important?

My recent book, *Not Stupid, Not Lazy: Understanding dyslexia and other learning disabilities*, which is written for parents, teachers, and the general public, describes the major learning disabilities, how to identify them, and what to do about them. I use stories of people who have struggled with learning disabilities to illustrate the main points. I show how writers such as Jane Austen, George Eliot, Thomas Mann, Ruth Rendell, and J.K. Rowling, with remarkable insight, have developed characters with dyslexia, although Eliot and Austen wrote before dyslexia was identified and given a label.

I write about what I call an educational tragedy. Our educational system has failed to identify many children with learning disabilities and I advocate the adoption of straightforward diagnostic techniques so that treatment options can be implemented at a young age. I challenge the use of complex and time-consuming testing that is currently used to diagnose learning disabilities. In their place, I outline simple and pragmatic techniques for testing for disabilities in reading, mathematics, spelling and writing.

Many children who struggle with learning become discouraged in the classroom and isolated from their peers. Many adults whose learning disabilities were not recognised in school suffer from deep feelings of inadequacy that often prevent them from developing close relationships, finding rewarding employment, or living happily.

I include accounts of people living with learning disabilities, case studies from literature, and profiles of highly accomplished individuals who have achieved success despite their learning disabilities. Their stories encourage people with learning challenges and those who support them to recognise and nurture each person's special talents.

What do you consider to be the next frontier in reading research?

Intervention research, especially classroom based intervention research and research on techniques to remediate learning difficulties in adolescents and adults should be given the highest priority.

Many teachers are not properly instructed in teaching reading and mathematic skills. Often they are not taught the importance of phonics and phonological awareness.
– Linda Siegel

What do you consider to be the barriers to improved reading instruction in your national and/or state school systems?

There are a number of barriers. Here are some of them:

- Many teachers are not properly instructed in teaching reading and mathematic skills. Often they are not taught the importance of phonics and phonological awareness.
- Dyslexia and other learning differences are not properly recognised.
- The reliance on the IQ test is a barrier. IQ tests are expensive and time consuming and do not yield helpful suggestions for helping the person with learning these skills.
- Failure to identify difficulties early, when it is much easier to treat them.
- Failure to identify students who are struggling with academic work. Inadequate individual testing of reading spelling mathematics and writing and reliance on group tests of questionable validity.
- Schools and individuals adopting reading programs and 'miracle cures' when there is no empirical evidence of their validity.

What sorts of books do you like to read for pleasure?

I love to read biographies and mysteries for pleasure.

What is your favourite novel and why?

My favourite keeps changing with every book that I read. My all-time favourite is *Pride and Prejudice* by Jane Austen. I love the subtle, understated humour and being transported to a world (18th and 19th English aristocracy) that is so foreign to my own 21st century middle-class world.

The importance of vocabulary for reading comprehension

John Kenny

You're right! Reading's not just about phonics.

There are five keys to reading identified in the scientific evidence for effective teaching of reading: phonemic awareness, phonics, vocabulary, fluency and comprehension (National Reading Panel, 2000; Centre for Education Statistics and Evaluation, 2017). Of the five keys, phonics gets the most attention, and rightly so. Phonics is the area in which students are most in need of help upon entry to school and therefore special attention to phonics instruction needs to be made. Yet phonics is only one of the five keys to reading and a focus on phonics alone will not ensure reading success. One worth a heavy focus is vocabulary. Vocabulary is a very important piece of the puzzle yet gains very little attention.

The importance of vocabulary is well established; the link between vocabulary and the goal of reading comprehension is profound. The rationale for a focus on vocabulary is obvious: if you do not know the meaning of a decoded word, then you will not be able to make sense of what you read. Biemiller has this to say on its importance:

> "Teaching vocabulary will not guarantee success in reading, just as learning to read words will not guarantee success in reading. Lacking either adequate word identification skills or adequate vocabulary will ensure failure." (Biemiller 2005, cited by National Reading Technical Assistance Center 2010)

This claim is backed by a very interesting study by Spencer, Quinn, and Wagner (2014) who endeavoured to find out if there is any such thing as a specific reading comprehension disability. They found that when decoding and vocabulary were both sufficiently developed, only 1% of students presented with comprehension difficulties. The focus on phonics is well justified, but if you want them to read well, you had better focus on vocabulary too.

Consider the following example as a demonstration of just how crucial vocabulary is for reading comprehension. Words considered common in written language but not necessarily spoken language have been underlined. If a child moving through the grades who is an adequate decoder but does not learn these words, they have very little chance of comprehending the text.

> *Johnny Harrington was a kind master who treated his servants fairly. He was also a successful wool merchant, and his business required that he travel often. In his absence, his servants would tend to the fields and cattle and maintain the upkeep of his mansion. They performed their duties happily, for they felt fortunate to have such a benevolent and trusting master.* (from Beck, McKeown, & Kucan, 2002)

Given how vital vocabulary is, it is concerning that 20% of all students who enter Kindergarten (their first year of formal schooling in NSW) are deficient in the vocabulary domain. Even more concerning is how much deficiencies are weighted towards the disadvantaged. The level of deficiency reaches 30% in disadvantaged areas (Reilly et al., 2010).

I think it is reasonable to assume that the vast majority of students presenting with deficient vocabulary knowledge are either not detected or not provided with adequate assistance. Its systematic development is not a priority. All teachers will tell you they do focus on vocabulary, but this is likely to be in incidental fashion (book readings and spoken language). Kerry Hempenstall (2016) writes that this preference could have to do with a widely held belief that vocabulary development follows a natural developmental trajectory. This could well be the case. The belief that education should accommodate the natural development of a child is widespread and is a key driver behind the constructivist teaching philosophy.

What's more, academics who teach teachers often hold a belief that language must always be taught in context, which could also contribute to a more incidental vocabulary instruction model.

Nevertheless, vocabulary is important and teachers should take note of the research. It indicates vocabulary instruction should start early through a range of strategies (Sinatra, Zygouris-Coe, & Dasinger, 2011). Students can learn the meanings of many new words indirectly, through personal experiences, speech and being read to – the incidental teaching and learning common in schools. They can also learn new vocabulary through reading texts; however, teachers cannot rely on this route of vocabulary development because those who can read well tend to read more and therefore learn more vocabulary through reading. This reality is one of the key drivers behind the Matthew Effect (Stanovich, 1986). A logical way to overcome such a problem would be to teach students the code (the top priority of early instruction), but some will lag behind and even if all do learn the code to an acceptable level, some will still be restricted in their access to texts outside of school.

Learning indirectly does help, but students need to be taught vocabulary systematically through direct instruction. Direct instruction supports students to learn complex concepts and ideas that are uncommon in spoken language but perhaps more common in written texts. What words to teach directly is an important question. In *Bringing Words to Life*, Beck, McKeown, and Kucan (2002) break vocabulary down into three tiers:

- Tier 1 – high frequency in spoken language (table, slowly, write, horrible)
- Tier 2 – high frequency in written texts (gregarious, beneficial, required, maintain)
- Tier 3 – subject specific, academic language (osmosis, trigonometry, onomatopoeia)

Tier 1 vocabulary does not need to be taught because we can reasonably assume this set of vocabulary will be picked up incidentally. If students are presenting with serious deficiencies in Tier 1 vocabulary, then keywords may need to be addressed in class and most certainly in out-of-class intervention. Tier 3 vocabulary is subject-specific and should be addressed whenever the time arises. For example, trigonometry can be introduced when students first encounter it in maths class.

Tier 2 vocabulary is the vocabulary we should target directly because such words are frequent in written text but are less likely to be learned incidentally through spoken conversation. The words underlined in the example above (merchant, required, maintain etc.) are examples of Tier 2 vocabulary. Knowing the meanings of Tier 2 words like these will have a profound impact on reading comprehension.

If a primary school were to design a systematic approach to building vocabulary concentrating on a core pool of Tier 2 words, then the effects on reading comprehension could be substantial. Consider a child in Kindergarten who is directly taught 10 Tier 2 words a week (two words, 15 mins a day) every week for seven years of primary school. That child would learn roughly 2800 words that are high frequency in written text at a deep level. Support this learning with the study of synonyms, cumulative retrieval practice, incidental exposure through text reading and a knowledge-based curriculum (the importance of a knowledge curriculum for vocabulary development cannot be underestimated) and the impact could be very profound indeed, especially for the disadvantaged.

References

Beck, I., McKeown, M., & Kucan, L. (2002). Choosing words to teach. In *Bringing Words to Life: Robust vocabulary instruction* (15-30). New York, NY: Guilford Press.

Centre for Educational Statistics and Evaluation. (2017). *Effective reading instruction in the early years of school.* Retrieved from http://www.cese.nsw.gov.au//images/stories/PDF/Effective_Reading_Instruction_AA.pdf

Hempenstall, K. (2016). *Read about it: Scientific evidence for effective teaching of reading*.

National Reading Panel (US), National Institute of Child Health, & Human Development (US). (2000). T*eaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction.* National Institute of Child Health and Human Development, National Institutes of Health.

Reilly, S., Wake, M., Ukoumunne, O., Bavin., E, Prior, M., Cini, E., Conway, L., Eadie, P., & Bretherton, L. (2010). Predicting language outcomes at 4 years of age: findings from Early Language in Victoria study, *Pediatrics*, *126*(6), 1530-1537, doi: DOI: 10.1542/

Spencer, M., Quinn, J. M., & Wagner, R. K. (2014). Specific reading comprehension disability: Major problem, myth, or misnomer? *Learning Disabilities Research & Practice, 29*(1), 3-9.

Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading research quarterly, 21*, 360-407.

Sinatra, R., Zygouris-Coe, V., & Dasinger, S. B. (2012). Preventing a vocabulary lag: What lessons are learned from research. *Reading & Writing Quarterly, 28*(4), 333-357.

John Kenny currently teaches Kindergarten in an inner Sydney public school. He writes regularly on reading instruction and other education topics through his blog. Connect with him on Twitter @johnkenny03 Email: johnkenny@live.com.au

Seven steps to improving reading comprehension

James Murphy

We often test comprehension, but how do we teach it?

In the so-called reading wars, all sides agree on one thing: comprehension is the goal of reading. However, whole language, meaning-first proponents work from the assumption that reading is language, which is a fatally misconceived notion. Reading is a written representation of language, which is something quite different from language itself. So teachers of the code-first approach show students how the written code represents the sounds of the spoken language. We do this not so that they will "bark at print", as Michael Rosen gleefully incants at every opportunity; we do it so that they will be able to know what the words are, and when these words are in their vocabulary, they will understand. If the words are not in their vocabulary, it is a teaching opportunity.

However, comprehension can neither be expected to develop on its own, nor can it be taught in isolation from the many aspects of language and human culture that impinge upon our reading experience. It is not developed merely by administering comprehension tests, although repeated testing does tend to have a slight positive effect on learning. Factors contributing to developing good comprehension include vocabulary, background knowledge, morphology, syntax, accuracy of decoding, and reasoning skills including logic and inference.

1. Background knowledge

Daniel Willingham has written this excellent article on teaching comprehension strategies: http://www.aft.org/sites/default/files/periodicals/CogSci.pdf. In essence, he argues that teaching specific comprehension strategies is useful and creates gains. However, these gains are achieved in a relatively short time and thereafter, extended training in comprehension strategies does not lead to additional gains. Instead, Willingham argues that schools will invest time more profitably if they also build students' background knowledge.

Such knowledge is essential for drawing logical conclusions and picking up inferences. If a student doesn't know that Mercury is a small, very hot planet closest to our sun, she is not going to pick up on the implied meanings in a slogan such as "Hotter than Mercury, cooler than Venus". Further, if she doesn't know that Venus is the seductive goddess of love, she won't pick up on the play of words between science and mythology. She might even form a misconception, gaining the mistaken impression that Venus is a cool planet while Mercury is hot. In fact, the temperature on the surface of Venus is nearly 500 degrees Celsius!

2. Vocabulary

Vocabulary is of course closely related to domain-specific knowledge. Vocabulary has been an important topic in the research literature for decades. For example, Bill Nagy's 1988 paper, 'Teaching Vocabulary to Improve Reading Comprehension', begins by pointing out that not all attempts to increase vocabulary result in improved understanding. What is required first is that

the approaches taken produce a greater depth of word knowledge – that is, more awareness of the shades of meaning attached to words. Secondly, Nagy asserts that it is important to read more, and to read more challenging material, in order to encounter and infer the meanings of new words.

Isabel Beck and her colleagues have produced the well-known book *Bringing Words to Life* (2013) which draws similar conclusions to Nagy, and offers a variety of practical strategies for teachers to develop students' vocabularies. Amongst other useful considerations, the authors suggest that students need to encounter a word 10 times or more in a variety of contexts for them to assimilate it into their own working vocabulary. They encourage explanations of words rather than definitions. They also recommend systematic methods for identifying which words should be prioritised for study in lessons, because they are 'higher leverage' words – that is, they enable students to access deeper meanings and more challenging texts.

3. Language structure: morphology and etymology

Another area of knowledge that enables students to increase their understanding is morphology. Morphology is the study of how parts of words carry meanings. Obvious examples are prefixes which mean 'the opposite of': un-, im-, anti-, etc. Suffixes too carry meaning: words ending in -ation will almost always be abstract nouns; -ment will also transform a word into a noun (can you think of an exception?). Once students readily recognise these familiar components, it becomes easier to identify the root word. For example, 'incantation' has a prefix in-, a suffix -action, and root 'cant'. It is easier now to focus on the root and demonstrate how this is derived from the same word that gives us 'chant' in English and 'chanteur' (a singer in French). So to incant means to engage in a song or chant, probably repetitively. This example demonstrates how knowledge of morphology is closely linked to etymology, the study or word origins. Etymology is able to bring words to life if it is joined with clear explanations, because the history of a word is also a part of the history of our culture. Both etymology and morphology also assist students with spelling, enabling them to take a more structured and analytical view of the words they are working with.

4. Main idea

A key goal of comprehension instruction is to enable students to identify 'the main idea', and more specifically to identify super-ordinate and sub-ordinate ideas. In other words, which one is the bigger idea, or which idea is more important in this text? Bob Dixon and colleagues developed a very useful strategy for this based on the idea of identifying the referents to an earlier stated topic idea or idea in a passage. This resulted in a Direct Instruction programme for reading comprehension called Reading Success which develops this and related principles over a series of lessons. Perhaps the simplest way to employ this strategy is to check that students are correctly linking pronouns to the original nouns. It is surprising how often students are unclear on who 'he' or 'it' might have been in a passage. Clearing up these confusions is usually straightforward and enables students to access what may have previously been baffling text.

5. Inference

There are three kinds of inferences that we may draw from a text: logical implications, probable inferences and possible inferences. Logical implications are those that must be true, even though they are not stated, because of other statements. If I invited five friends to go camping, and only two didn't come, how many people went camping? (Four.) If a character arrived home at seven o'clock, they must have been elsewhere before that. And so on.

Probable inferences are likely to be drawn from a text and from our personal knowledge. If the passage says "I ate four sandwiches when I got home from school", a probable inference is that I was hungry. There are of course other possible inferences, e.g. I had not had lunch, or that I am greedy.

Fiction writers frequently invite readers to speculate in order to generate possible inferences. This keeps the reader's imagination actively engaged, and adds to suspense and narrative power. For example, in "The tall man stood at the door for some time before he finally knocked," the writer doesn't tell us why the man paused, or even who he is, but we know that this detail must be important, so we begin to speculate: he is hesitant; he has doubts about his course of action; he is waiting for something or someone; he is listening. It is not important that the speculations should be correct at this stage – these will be confirmed or otherwise as the story proceeds. What is important is that we have considered the possibilities. Students need to be conscious that such opportunities are deliberately contrived

by authors to help draw their attention to important ideas.

Practice with inferences can happen both incidentally, as the teacher works through a text with students, or more systematically, for example as starter activities.

6. Reasoning

Precise use of logic and reasoning is also an essential part of developing reading comprehension. This is particularly important as we seek to develop independent critical thought. There are very few programmes which set out to teach students important logical patterns, like analogies, or logical fallacies (Corrective Reading Comprehension is one that does). Once students get used to spotting errors, they may even find the exercise fun. For example, at a simple level, we can ask students to explain what is wrong with this syllogism:

All Dalmatians have spots.
My cat has spots.
Therefore my cat is a Dalmatian.

Common logical fallacies include ad hominem, straw man, argument from authority, false cause and middle ground. (See www.yourlogicalfallacyis.com for an extensive list with explanations.) Teaching students to identify logical fallacies arms them with powerful tools and also (hopefully) helps them to avoid such mistakes themselves.

7. Memory

Finally, there is no substitute for memory. Just as knowledge is important, so is the recall of that knowledge when it is needed. If we want students to understand key ideas, we need to ensure that they have been taught the necessary knowledge well enough that it is retained in long-term memory. Such teaching requires a systematic approach to planning, and guided practice with feedback. Independent practice without feedback is likely to result in errors being learned more thoroughly.

In conclusion, reading comprehension can be taught through developing students' reasoning, inference and deduction skills, and is also built by strengthening background knowledge, vocabulary, language skills and memory training. Some specific strategy training is desirable; but explicit teaching of knowledge is also vital for strong comprehension.

As for the meaning-first approach to reading: guessing from pictures is not reading comprehension, it's guessing. Perhaps that is why we are still getting so many students arriving at secondary school with poor comprehension skills.

Recommended

For further reading on teaching reading comprehension, we recommend the excellent practice brief below by Alison Boardman and colleagues. Along with specific strategies such as activating prior knowledge, using graphic organisers, and summarising, the authors also show how word study, fluency and vocabulary are important to developing comprehension.

References

Boardman, A. G., Roberts, G., Vaughn, S., Wexler, J., Murray, C. S., & Kosanovich, M. (2008). *Effective instruction for adolescent struggling readers: A practice brief.* Austin: Center on Instruction.

Beck, I., McKeown, M., & Kucan, L. (2013). *Bringing words to life: Robust vocabulary instruction.* London: Guilford Press.

Nagy, W. E. (1988). *Teaching vocabulary to improve reading comprehension.* Urbana: National Council of Teachers of English.

Willingham, D. (2006). The usefulness of brief instruction in reading comprehension strategies. *American Educator,* Winter 2006-2007. American Federation of Teachers. Retrieved from http://www.aft.org/sites/default/files/periodicals/CogSci.pdf

James Murphy has worked in secondary schools in New Zealand and the UK for 30 years, as an English teacher, Head of English and senior leader. He holds a Master's degree in Education with Distinction from the University of Canterbury, New Zealand, and a postgraduate diploma in special teaching needs. Since 2016, he has been working full-time with Thinking Reading to develop robust systems for implementation and evaluation. He is a regular speaker at researchED conferences, an occasional media contributor, and blogger.
Twitter: @HoratioSpeaks
Email: jmurphy@thinkingreading.net
Blogs: https://thinkingreadingwritings.wordpress.com and https://horatiospeaks.wordpress.com
Web: www.thinkingreading.net

Requiem for a straw man

James Murphy

" ... and indeed it takes
From our achievements, though performed at height,
The pith and marrow of our attribute." – Hamlet

There is a common refrain in the discourse about teaching reading that almost immediately derails the debate, and which ensures that people are talking at cross-purposes. This does nothing to advance the cause of improved reading teaching, which is the cornerstone of a good education.

The misunderstanding is apparent every time someone proclaims that "there is more to reading than just the words on the page". Surely this must be one of the most trite statements possible with regard to teaching reading. Of course there is more to it than that – otherwise why would anyone bother to read? The obvious facility of this position tends to suggest that the speaker is avoiding the issues – or else holds a prejudiced, and uninformed, view of what proponents of effective decoding teaching are actually advocating.

Those who propound good phonics instruction do so because it is a means to several related ends, ends with which almost every teacher would whole-heartedly concur: improved comprehension, access to background knowledge, development of imagination and empathy, and a love of literature. It is essential for us all to acknowledge that these are important points of agreement in an often conflicted and highly emotive field. Those who advocate phonics do so because they believe its effective inclusion in the curriculum will achieve these goals better than it if was left out.

Equally, those who propound phonics do not do so because they are in favour of rote, drill-and-kill, or some linguistic form of Pavlovian conditioning. They do so because they know that phonics is what children need to know, and decoding accurately and fluently is what they need to do, in order to support those longer-term aims.

It is important to stress the *what* in that last sentence. Phonics (i.e., knowledge of sound-spelling relationships) is a body of knowledge which students will need to recall automatically and effortlessly for the rest of their lives. As such, it needs to have a systematic organisation within the curriculum, and, just as importantly, in the teacher's mind. For many teachers, this is commonplace; they simply see phonics as an aspect of curriculum and try to ensure that it is taught well, both in its discrete components and how it is integrated with the wider curriculum.

For others, though, a systematised body of knowledge seems too didactic. This is particularly so where theories of child development with discovery as the main focus of learning hold sway. In this view, children should find things out for themselves, and so the environment is arranged in ways that are intended to stimulate their imagination and creativity. Children encounter books and print, they talk about them, they make links between words and pictures, and they are encouraged to think from the 'top down', to infer what

the text says from a general sense of what the story is about. While all this is often stimulating, it does not work well as a comprehensive system for teaching children to read.

The biggest problem with this approach is that it actually works for some children. Most children can actually intuit much of the English alphabetic code, given time and opportunity. Why is this a problem? Because for teachers it leads to what one researcher called "intermittent reinforcement" – just enough reward to harden our behaviour into a habit. Cognitivists might call it 'confirmation bias' – we attend to those success stories that confirm our preferred ways of doing things. So when some children pick up reading anyway, we can say, "See, Samantha learned to read this way. But Simon didn't, so there must be something about Simon that's causing the problem." As a result, all children learn to read more slowly than they might, and some do not learn very much at all.

What is puzzling is that those who contest phonics do so in the face of overwhelming evidence that teaching this body of knowledge systematically is of great benefit to children's emotional and cognitive development. Conversely, failure to learn reading – something that seems to afflict about 20% of children not taught systematically – has ongoing and debilitating effects on achievement, self-esteem, mental health and behaviour. And that's just during the school years. The effects of low literacy beyond that are enduring and pervasive.

So why oppose something that massively reduces the incidence of illiteracy, and greatly enhances children's life chances? Writing off phonics teaching as a 'one-trick pony' or 'barking at print' won't cut it. There is indeed a lot more to reading than just phonics. In the same way, there is a lot more to being an athlete than just fitness, but you won't get far without it.

James Murphy has worked in secondary schools in New Zealand and the UK for 30 years, as an English teacher, Head of English and senior leader. He holds a Master's degree in Education with Distinction from the University of Canterbury, New Zealand, and a post-graduate diploma in special teaching needs. Since 2016 he has been working full-time with Thinking Reading to develop robust systems for implementation and evaluation. He is a regular speaker at researchED conferences, an occasional media contributor, and blogger.
Twitter: @HoratioSpeaks
Email: jmurphy@thinkingreading.net
Blogs: https://thinkingreadingwritings.wordpress.com and https://horatiospeaks.wordpress.com
Web: www.thinkingreading.net

What is puzzling is that those who contest phonics do so in the face of overwhelming evidence that teaching this body of knowledge systematically is of great benefit to children's emotional and cognitive development.

Some thoughts on the teaching of reading

Bob Sweet

1. When children are born they acquire the ability to speak words aloud and gradually to associate those words with meaning. Mama, dada, kitty, doggie, hotdog, spoon, MINE, NO … this process is a natural process that comes by associating words in a child's spoken vocabulary with the words parents, siblings, and others use in daily conversation at home. As the child grows and learns to associate more and more words with items and concepts like love, good, bad, wind, ocean, lake, their spoken vocabulary expands.

2. Picture books with a few words repeated over and over become favorites with children and many memorise the words of the story without really knowing the full meaning conveyed by the story. Some parents begin to say the letter sounds of the words, while many do not. Children usually learn the alphabet quickly and with much repetition they can repeat it for parents and others with great delight.

3. By the time children are aged four or five, their spoken vocabulary includes several thousand words that they can talk about, use and understand. The background of children entering preschool and kindergarten varies greatly but even those who have not been exposed to books, or have not been read to by their parents, have a sizable spoken vocabulary that they can use effectively in communicating with others. That vocabulary is far greater than the few hundred words they are required to memorise in most schools today.

4. Formal schooling, beginning in kindergarten, is where a child is taught to read words that are already in their spoken vocabulary. There is no problem with them comprehending the words in the text, if attention is paid to how these spoken words are introduced. Decodable books are often used effectively in this process so that unusual word spellings are not a hindrance from code mastery. However, when 'big books' or library books are used before the letter/sounds of the wide variety of words included have been taught, a child has no choice but to try to guess at new words where the letter/sounds have not yet been taught. This process, if followed systematically, directly, sequentially and completely should be complete for most children by the end of grade two at the latest. 'Decoding' is not taught year after year if it is taught properly. It is a skill to be mastered early and well.

5. For a child who has not been taught any of the letter/sound combinations the lines on a page of print are no more than squiggles. There is no meaning to them, unless the entire word has been memorised. Most whole word programs require that children memorise lists of most frequently used word, such as the Dolche list, but that approach limits them to the number of words they can memorise, rather than providing them with the tools to unlock ANY new word in the English lexicon.

6 The purpose of teaching children from the outset the letter/sounds of ALL of the 26 letters, the 45 sounds they represent, and the many ways to spell those sounds, is that this the most effective way to provide the tools for any child to become a proficient reader. Once this system of sound symbols has been mastered, then all new vocabulary words can be spoken aloud with meaning and can be understood as new subject matter is taught. Some would say reading to learn.

7 There are a significant number of words beyond the spoken vocabulary that a child already has mastered orally; that is, what they "can talk about and understand".

8 For many years, children were encouraged to do "uninterrupted sustained silent reading (USSR)". The problem with this approach is that a teacher could not know if a child was really reading and understanding the words. The value of this approach is certainly questionable unless the ability to decode the words and the ability to attack new words and learn their meaning is taught. Reading aloud is the only way that a teacher can really know if a child is truly 'reading'. Even the tests given that measure reading ability are flawed, in my view, because they do not accurately measure how well a child has mastered the skill of reading.

9 Learning to read is a skill. It is not a 'natural' process like learning to speak. And yet the dominant philosophy and approach to reading instruction for the past half century and more has assumed that it IS a natural process. Thus, many children never break free and learn new vocabulary words beyond what they can memorise. With more than a million words in the English lexicon, and at least 60,000 or more used in an adult vocabulary, the handicap placed on children who are never taught the decoding skills, hampers many for life.

10 I know of NO one who believes that learning to decode the English spelling system is an end in itself. This is a straw man that has been promoted to discredit those who encourage learning the code and how it works early in the formal education of ALL children. As it is often said, decoding is an essential, although not sufficient, step in learning to read.

11 If ALL children entering formal schooling were taught this decoding skill early, systematically, and completely, then the number of students labeled as dyslexic, or as struggling readers would be dramatically diminished. It has been proven, beyond any reasonable doubt, that ALL children would benefit from this practice.

12 All of the interesting and very helpful discussions on listservs like the DDOLL network contribute to the mechanics of how to apply a more effective way to teach a child to read. However, until there is a 'sea change' in how reading educators accept the fact that reading is a "skill" then not much will change. We will continue to deny children the ability to become truly 'literate'. Reading science has settled this endless war over methodology. It is up to the adults among us to apply it in the classroom.

13 In my view, and experience I think this is one way to describe the 'natural' way and progression for how one acquires the skill of reading proficiently, and thus help all children become truly literate individuals.

Robert Sweet founded the National Right to Read Foundation in 1993, of which he is currently the President. He has held positions at the US Department of Education, the National Institute for Education, and the White House Domestic Policy Council. He has also held the positions of Administrator for Juvenile Justice and Associate Director for the Children's Bureau at the U.S. Department of Health and Human Services. In 2005, he retired from public service after serving for eight years as a Professional Staff Member on the US House Committee on Education and the Workforce where he focused on improving reading instruction in the United States. He was the primary author of Reading First and Early Reading First.
Email: federalist225@gmail.com
Website: www.nrrf.org

Zero to hero – why we need phonics more than ever in the digital age

Tom Nicholson

Recently I gave a talk to parents about phonics. It was called 'Zero to Hero', and I explained that phonics could help children who struggle with reading and writing by showing them how to crack the code.

Modern phonics is about explaining the history of English and how our spelling became the way it is, that there is a system – even though sometimes it seems like madness. We can read and write more successfully if we understand how the spelling system works and that it is based on phonics.

Many parents I spoke to were worried about their children and when I asked what they meant, they were quick to show me examples of their children's writing. With their smartphones, they had taken photos of their children's hard copy writing efforts and brought them along to the workshop to show me.

When I looked at some of the handwriting I could see immediately that while children's spelling was definitely logical and sounded quite similar to the real word, there were many errors, even on what were quite simple words to spell, that would be easy to correct if they knew more about phonics. For example, one 10-year-old wrote: "We went to Echuca with my famly. We mist a week of school, yay! We do my favret sport warter sking. It is nice to be with famly. It is fun!" Another wrote: "I was warking prst a groop of boys and gerls and they war plauing football. I sood trigh football."

These examples are familiar to researchers in this area, showing that many students struggle. More than a third of our children are below national standards in writing and some of this will be because of spelling.

Why is this happening? One complication is that spelling is low status as a subject to teach. It is called a 'surface' feature which suggests it is mechanical, a skill, not important compared with 'deep' features such as content and ideas. Of course, you will never be a good writer if you do not have good ideas but if you can't spell it is awfully hard to express those ideas in print. Spelling is a modern Cinderella, a neglected child at school. A second complication is that many teachers are concerned about spelling but are not sure how best to teach it – phonics was not part of their training and they desperately would like to teach spelling better. A third complication is the digital age, our students are growing up in a world of instant messaging using different platforms in which invented spelling hz bcum gr8 and valid. Students are receiving contradictory messages: at school, correct spelling is normal and outside of school, texting, snapchat, tweets are in abbreviated textspeak and as long as it sounds right then this is also normal. The irony is that good spellers are also good at textspeak – they can move between these two worlds.

Research shows that, even with only a few spelling errors in an essay a teacher's rating of the work will drop substantially. A single spelling mistake can ruin the chance of a job when you send in an application. In

the workplace, a text message or email sent with a spelling mistake puts the sender and the company in a bad light.

At the other end of the spectrum, some students are amazing spellers, as anyone who has watched the movie Spellbound about the national American spelling bee can tell you. Really good spellers in junior high school can spell words like mnemonic, bildungsroman, notochord and conquistador.

In contrast, difficulty with spelling makes even the spelling of simple words an arduous task and uses up precious mental energy that could be used for thinking up ideas. Overall, the research tells us that being poor at spelling results in a lower quality of work than you are capable of.

Spelling is more important than ever in this digital age. Yes, there are predictive spell checkers and this technology helps but a lot of spelling mistakes slip through. Students who struggle with spelling are particularly on the back foot because the spell-check software is often not sure what they have written and gives a word they did not mean to say.

Phonics teaching does help tremendously with spelling because it teaches students rules. Phonics may not give complete accuracy but it usually puts you 90% there in terms of accuracy; the last 10% will come with lots of reading and writing practice. And yet we do not capitalise on phonics as a teaching strategy. In most classrooms, students are given a list of words to learn on Monday and tested on Friday. Yes, many students will learn how to spell by this rote method but many will not and need phonics strategies to make them great spellers.

Phonics produces incredible results. I've never seen a student learn phonics and not improve. I'm not saying that phonics is the whole answer but it is a fantastic foundation that children can build on to become great readers and spellers. A study in Scotland found that children taught intensive phonics in their first year of school who were tested for reading and spelling in Year 7 were years ahead of a control group who had not received such intensive instruction.

These results convinced the English government to change their teaching to intensive phonics. Each year, schools in England have children sit a compulsory national phonics check and results are showing that children's skills are rapidly improving.

Phonics is a pathway to better spelling and writing and we are letting many of our little heroes become zeros by not teaching them this crucial skill.

Tom Nicholson is a Professor of Literacy Education at Massey University in Auckland, New Zealand, and a member of the Reading Hall of Fame. His publications include over 20 books, including The Phonics Handbook*, and he is currently writing a new book on teaching writing effectively.*
Email: T.Nicholson@massey.ac.nz

Nomanis Notes
Issue 1 | September 2017

Is it a scam?

Jennifer Stephenson, Kevin Wheldall and Mark Carter

Statement of the problem

There are many interventions available for people with learning disabilities and special education needs. Some have a strong evidence-base and are likely to be effective. Others have little or no scientific evidence to support them and are likely to be ineffective and perhaps even harmful. Teachers and parents need to select interventions that are likely to be effective.

Proposed solution/intervention

There are a number of signs that indicate that an intervention is likely to be ineffective. When teachers and parents are evaluating an intervention it may be helpful to look for the following danger signs or 'red flags'. Not all interventions will have all the danger signs, and some effective interventions may also have some of the signs. It is important to take a sceptical approach and not accept claims at face value.

Red flags

1. The intervention is claimed to be effective for a wide range of problems; for example, dyslexia and traumatic brain injury.
2. The intervention is claimed to cure the disability; for example, claims that dyslexia can be cured.
3. The intervention is claimed to be a new breakthrough, to produce immediate results or is described as "astonishing" or "miraculous".
4. The evidence provided to support the intervention comprises anecdotes and testimonials in the absence of quality scientific studies.
5. There is only one study that supports the treatment or supporting studies do not include comparisons with other interventions.
6. There is no clear plausible connection between the intervention and the difficulty it addresses, for example balancing exercises to improve reading.
7. The people who are selling the intervention are the same people completing the assessment to decide if the intervention is suitable.
8. The intervention is not supported by established understanding of the problem it addresses; for example, visual problems treated as an intervention for reading difficulty.
9. Professional bodies with relevant expertise do not support the intervention; for example, eye exercises and specially tinted filters or lenses for the treatment of reading difficulties are not endorsed or recommended by the American Academy of Pediatrics, Section on Opthalmology and similar organisations.
10. Those promoting the intervention claim it is being suppressed by medical or educational authorities.
11. The intervention is promoted through infomercials, or self-promoting websites and books.
12. The claims make a play on emotion rather than reason.
13. There has been legal action over the intervention.

What should I ask about an intervention?

- Is there any scientific research, published in academic journals, to support the claims?
- What are the credentials of the people providing the intervention and the experts recommending the intervention?
- What other options are there for the problem?
- What are the possible side effects?
- Exactly what changes will I see in the child if the intervention is successful?
- How long will these changes take?
- Can I afford it?

Conclusion

If it sounds too good to be true, it probably is.

Key references

Bowen, C., & Snow, P. (2017). *Making sense of interventions for children with developmental disorders: A guide for parents and professionals.* Guildford, UK: J & R Press Ltd.

Jacobson, J. W., Foxx, R. M., & J. A. Mulick, J. A. (2005). *Controversial therapies for developmental disabilities: Fad, fashion, and science in professional practice.* (pp. 331-350). Mahwah, NJ: Lawrence Erlbaum.

Stephenson, J. (2004). *A teacher's guide to controversial practices. Special Education Perspectives, 13*, 66-74.

MultiLit

Nomanis Notes
Issue 2 | October 2017

What is direct instruction?

Kevin Wheldall, Jennifer Stephenson and Mark Carter

Statement of the problem

International studies comparing performance across countries have led to concerns regarding the academic performance of children in our schools, especially of those from less privileged backgrounds. This in turn has led to questioning by some of current child-centred, 'progressive' teaching and instructional practices in Australian schools. Critics have argued that presently-favoured methods of teaching basic skills, such as literacy and numeracy, are not as effective as they should be and that, as a result, school children are not progressing as quickly as they might. Particular concern has been expressed about the academic performance of Indigenous students, especially those from remote communities.

Proposed solution/intervention

Faced with this dilemma, some researchers and policy makers have advocated for more teacher directed forms of instruction variously described as 'explicit instruction', 'direct instruction' and 'Direct Instruction' (capitalised) also known as DI. Explicit instruction and direct instruction may both be viewed as the generic overarching concept with DI as a more specific exemplar. They share a concern with teacher directed, explicit and carefully sequenced instruction with a specific focus on mastery learning. Typically, the instructional procedure follows the pattern of modeling by the teacher, followed by guided practice with informative feedback, and finally by independent practice. This may be summarized as: "I do, we do, you do."

The theoretical rationale

Theoretically, this approach has its origins in the body of research on effective instruction, instructional design, and applied behaviour analysis, carried out largely in the United States, since the 1960s.

Explicit instruction versus Direct Instruction

The terms explicit instruction and direct instruction (lower case) may be used virtually interchangeably but it has become a convention to use the capitalised term Direct Instruction (or DI) to refer specifically to the suite of commercial programs developed by Engelmann, Becker and their associates in the United States. All of these programs are tightly scripted and prescribed programs of instruction for which all teaching and student materials are supplied. This high level of prescription is not essential and other forms of explicit/direct instruction may be more loosely structured while following similar principles.

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

There is a large body of research evidence stretching back over four decades testifying to the efficacy of explicit/direct instruction methods including the specific DI programs. Possibly the largest educational experiment ever conducted, in the 1970s, comparing many different forms of instructional practice, found that the gains made by students undertaking the DI programs designed by Engelmann and colleagues were far greater than for any other program. This has been confirmed by recent meta-analyses. Research has also confirmed the superiority of explicit/direct instruction more generally compared with minimally guided instruction, as currently advocated.

Conclusion

Explicit/direct instruction is recommended.

Key references

Archer, A. L., & Hughes, C. A. (2011). *Explicit instruction: Effective and efficient teaching.* New York: Guilford Press.

Hughes, C. A., Morris, J. R., Therrien, W. J., & Benson, S. K. (2017). Explicit instruction: Historical and contemporary contexts. *Learning Disabilities Research & Practice, 32*, 140–148. DOI: 10.1111/ldrp.12142

McMullen, F., & Madelaine, A. (2014) Why is there so much resistance to Direct Instruction? *Australian Journal of Learning Difficulties, 19*, 137-151, DOI:10.1080/19404158.2014.962065

Rosenshine, B. (2008). *Five meanings of direct instruction.* Lincoln, Illinois: Centre on Innovation and Improvement.

MultiLit

New series of InitiaLit Readers for Year 1 students

MultiLit is excited to announce the release of a second set of 60 illustrated phonic readers – this time for Year 1 readers.

MultiLit has developed two sets of 60 phonic readers for children who are just learning to read. These delightful decoadable books are carefully sequenced to encourage children to use good reading strategies from the start.

The decodable InitiaLit Readers were developed to support InitiaLit – a whole-class literacy instruction program for Foundation to Year 2 children.

InitiaLit–F Readers (Levels 1-9), first released in 2016, are designed for children in the Foundation year of school. InitiaLit–1 Readers (Levels 10-16), released in 2017, are for Year 1 students. Different text types, such as information texts, poems and plays, have been introduced in Levels 10-16.

Books are available in classroom sets (six copies of each title), full sets, level bundles or individually.

Have fun with *Mick and Dan*, *Super Pug* and *Blip the Android* while providing much-needed practice for children just beginning to discover the joy of reading.