WHY JAYDON CAN'T READ: THE TRIUMPH OF IDEOLOGY OVER EVIDENCE IN TEACHING READING

The current entrenched rate of illiteracy among Australian children is unnecessary and avoidable, write **Jennifer Buckingham**, **Kevin Wheldall** and **Robyn Beaman-Wheldall**.

Governments across Australia recognise the importance of literacy. Billions of dollars have been spent on programs aimed at improving the literacy of school children in the last decade alone.[1] These programs have most often focused on low-performing students and those most at risk of having low reading achievement—students from low socioeconomic status (SES) backgrounds and Indigenous students.[2] Yet national and international tests show that average achievement is static, with no reduction in the proportion of Australian students at the lowest performance levels and no increase in the proportion of students at the highest performance levels—if anything, the trend is in the wrong direction.[3] Low SES and Indigenous students are still strongly over-represented among students with the lowest standards of reading at primary and secondary levels.[4]

This lack of improvement, despite significant investment of financial and human resources over many decades, suggests that the problem of poor literacy is intractable. High quality research evidence and case studies of individual schools contradict this conclusion. With exemplary teaching, and effective and timely intervention, more students can achieve higher levels of reading achievement and fewer will fail to learn to read, irrespective of their family background.[5] The problem is that too many children are not receiving exemplary instruction. A persistent 'research-to-practice gap' has prevented the widespread adoption of effective methods for teaching reading, with profoundly negative consequences for children.[6]

All other English-speaking nations have experienced the same problem with translating knowledge into action, but the degree to which it is extant largely depends on the success of government policy. In the United Kingdom, where policy on reading instruction is now highly prescriptive as a result of the Rose review in 2006, there are indications of improved reading levels.[7] There has been lesser improvement in the United States, where the policy was ambitious but difficult to implement.[8] With ambiguous



Jennifer Buckingham is a Research Fellow at The Centre for Independent Studies. **Emeritus Professor Kevin Wheldall** AM of Macquarie University is Director of the MultiLit Research Unit and Chairman of MultiLit Pty Ltd. **Dr Robyn Wheldall** is an Honorary Fellow of Macquarie University, Deputy Director of the MultiLit Research Unit, and a Director of MultiLit Pty Ltd.

policies, Australia and New Zealand languish at the bottom of English-speaking nations in the 2011 Progress in International Reading Literacy Study (PIRLS).[9] This essay investigates why the highly robust scientific evidence on reading instruction has yet to influence classroom teaching in Australia.

What is effective reading instruction?

It is important to distinguish between teaching *reading* and teaching *literacy*. Reading refers to the ability to decode, recognise and draw meaning from the printed word. It is a specific and measurable process. Literacy, in educational parlance, is a broader term that involves 'listening to, reading, viewing, speaking, writing and creating oral, print, visual and digital texts, and using and modifying language for different purposes in a range of contexts.'[10] This essay is about the teaching of reading, particularly initial and remedial reading. Initial reading instruction and remedial reading instruction are highly specialised and well-researched disciplines of study. Although the principles of effective evidence-based reading instruction apply generally, it is vital in the early years of school and for struggling readers.

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Strong differences of opinion among educators on what constitutes effective methods of reading instruction have been dubbed 'the reading wars'—with proponents of phonics-based instruction on one side and 'whole language' instruction on the other.[11] It is a false dichotomy, however.[12] Phonics, when taught properly, provides beginning readers with the skills and knowledge to decode and read familiar and unfamiliar words, avoiding the need to remember every word in written English by sight.[13] Whole language methods focus on children using their reading skills in context, enjoying the experience of reading and appreciating the meaning of words.

Unfortunately, whole language advocates deny the importance of phonic skills in learning to read, claiming that reading is acquired naturally—like speech. In the whole language approach, if phonics is taught, it is only incidentally and in context.[14] For example, the English Teachers Association of NSW advises that when children come across an unknown word, they should be encouraged to 'predict' or guess it, even though it has long been known that predicting words using context and picture cues has a low probability of accuracy, particularly when the text becomes more complex.[15] Accurate phonic decoding is listed as a strategy of last resort.

Advocates of evidence-based effective reading instruction, however, do not promote phonics as a singular, complete approach to the teaching of reading. Phonics instruction is one essential component of a comprehensive initial reading program—it is necessary but not sufficient on its own.[16] Good reading programs are equally strong in developing higher order skills that lead to understanding and analytical response.[17]

There is a large and robust body of scientific evidence on how children acquire reading skills early and quickly. It shows that effective reading instruction has five main components or 'big ideas': phonemic awareness, phonics, fluency, vocabulary and comprehension. It also shows that the best way to teach these skills is through explicit instruction by clearly explaining, demonstrating and guiding students to develop these skills.[18]

Reading instruction that incorporates the five big ideas and teaches them in an explicit and systematic way is effective for all children. It is, however, particularly effective for children most at-risk of difficulties in learning to read—low SES students, Indigenous students, and boys.[19]

Although phonics is only one part of a comprehensive reading program, it warrants special attention. Many teachers and reading programs purport to teach phonics, but do not reflect the specific set of research literature devoted to the most effective way of teaching phonics.[20] The research literature shows that phonics is most effectively taught by the 'synthetic' approach—a

highly structured, sequential and explicit method that teaches beginning and remedial readers how to construct words from the smallest language 'building blocks' of letters and letter combinations, and their corresponding sounds.[21] Implicit or incidental teaching of phonics is not effective evidence-based reading instruction.

Why do so many children still struggle to learn to read?

According to reading researchers, the whole language approach has dominated the teaching of reading in Australian schools over the last 30 years.[22] This contention is supported by pro-whole language statements and articles by high-profile literacy academics in university education faculties and teacher professional organisations.[23] In addition, despite short-term efforts and positive rhetoric, no government in Australia has implemented policies leading to the widespread adoption of effective evidence-based reading instruction. It has sometimes been a case of one step forward, three steps backwards. In 2009, the NSW government published three papers on teaching reading, focusing on the elements of instruction most often misunderstood or entirely missing from initial reading instruction—phonemic awareness and phonics. These documents were praised by reading scientists and created some optimism that change may be afoot.[24] By 2012, after a change of government, these documents were removed from the education department website and can now be obtained only through special request. In 2010, the NSW education department implemented in a number of state schools an initial reading instruction program that claims to be research-based, but does not resemble effective evidence-based reading instruction as understood in the scientific reading research literature.[25]

Unlike the negligible positive impact of system-level programs, marked improvement has been observed in individual schools as result of school-driven initiatives. For example, Bellfield Primary School (closed in 2010), Ballajura Primary School, Goondi State School, and Innisfail East State School have all shown remarkable improvements in their reading levels after adopting proven, explicit teaching methods.[26] The MiniLit and MultiLit remedial reading programs—comprehensive programs that incorporate all five 'big ideas' of reading—provide more evidence of the power of good instruction. Various versions of the programs have been used in tutorial centres, schools and reading clinics for more than a decade. Numerous evaluations in this time show that children accelerate their reading progress, often achieving reading levels average for their age, and sometimes higher.[27]

If we know what works in teaching children to read, what is the problem?

The most effective teachers (as determined by the reading score growth of their class) used a highly structured approach to introduce phonics content, and then embedded the knowledge in a wider context to encourage generalisation.

Many teachers are not using the most effective methods for teaching reading

Although there has been no comprehensive audit of literacy lessons in schools, surveys and research projects have provided evidence that the quality of teaching of reading is highly variable in Australian schools. A study of initial reading instruction in a national sample of 200 classrooms found wide (statistically significant) differences in reading growth. The most effective teachers (as determined by the reading score growth of their class) used a highly structured approach to introduce phonics content, and then embedded the knowledge in a wider context to encourage generalisation.[28] A study of 33 Catholic primary schools in Victoria found a strong emphasis on explicit phonics teaching and widespread use of commercial phonics programs, but noted a lack of integration of this component into richer literature-based activities and writing.[29]

Methods with weak proof for their effectiveness are still widely used. A survey of special education teachers in a national sample of schools reported a disproportionate use of evidence-based practices but also reported moderate-to-high levels of using interventions with poor research support.[30]

The most widely used early intervention program in primary schools is Reading Recovery. In NSW, it is the only formal remedial reading program fully funded by the state government, even though it does not include all the components of effective evidence-based reading instruction, and despite research findings questioning its efficacy among children with the most serious reading difficulties.[31] Reading intervention relies heavily on one-to-one programs, which are expensive and therefore available to limited numbers of students. In a Response to Intervention (RtI) model of teaching and assessment, struggling readers are first provided with support in small groups, reserving one-to-one tuition for students with the most serious reading difficulties.[32] RtI offers a more cost-effective approach but has rarely been used.[33]

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Perhaps the strongest evidence of ineffective teaching is the substantial number of children who have failed to achieve even the most basic level of reading ability after three years of schooling. In the 2012 NAPLAN tests, 38,000 Year 3 students (13.8%) were at or below the (very low) minimum standard for reading.[34] This does not include students exempt from testing, such as children with disabilities and new migrants. This is the equivalent of 100 average size primary schools full of cognitively able children who are poor readers despite an estimated 1,200 hours of reading instruction.[35] There are thousands more non-readers in the higher grades.

The evidence on effective teaching methods, and phonics in particular, has not bypassed teachers and schools entirely. Australian researchers have repeatedly found positive attitudes about 'code-based' reading instruction methods among pre-service and in-service teachers in surveys since 2005.[36] A growing awareness in schools of the need for phonics instruction can also be seen in the strong market for commercial phonics programs. Retailers and distributors of commercial phonics programs say thousands of schools across Australia have bought *Jolly Phonics* and other popular programs such as THRASS and the Spalding Method.[37] But according to the product consultants, more sales of phonics programs have not translated into better outcomes for numerous reasons. Product sales do not necessarily mean the products are used well, or even used at all. Training, which focuses on using the product resources, is insufficient, particularly for teachers without a strong grasp of language structure. The research described below indicates that this may be typical.

The 'Peter effect' in language skills—One cannot give what one does not possess

In the Bible, when a beggar asked the apostle Peter for money, he replied that he could not give what he did not have himself. In the context of education, the 'Peter effect' is 'one cannot teach what one does not know.'[38] Low entrance requirements have resulted in pre-service teachers whose personal literacy skills may be inadequate to teach reading effectively.[39]

This view is supported by research surveys showing that teacher educators and senior school staff in a national sample of university education faculties and schools had low levels of confidence in the personal literacy skills of beginning teachers. Half the senior school staff surveyed said beginning teachers were 'fairly well' prepared, and only 4% said beginning teachers were 'well' prepared in personal literacy competence.[40] Similarly, teacher educators in focus groups held for the National Inquiry into Teaching Literacy (NITL) reported that 'many [teacher education] students lacked the literacy skills required to be effective teachers of literacy' and needed explicit teaching themselves about meta-linguistic concepts.[41] The report also noted that not all universities required pre-service teachers to address this problem as a condition of graduation.

Studies conducted in the United Kingdom, the United States and Australia have repeatedly found that a large proportion of pre-service and in-service teachers had insufficient knowledge of meta-linguistics—basic language constructs such

as phonological awareness and morphology—to be able to use it in their teaching.[42] For example, a study in Victoria found that only 9% of pre-service teachers and 18% of in-service teachers knew that the word 'box' has four speech sounds. Only 38% of pre-service teachers and 52% of in-service teachers could identify the correct definition of a syllable.[43] A study conducted in Queensland likewise found that pre-service teachers had 'weak' and 'rudimentary' awareness of the language constructs that underpin phonics.[44]

It therefore appears that the ground has shifted somewhat. The importance of phonemic awareness and phonics in teaching reading seems to be widely acknowledged among teachers, but many have neither the personal literacy skills nor the requisite professional and practical knowledge to teach them well.

Teacher education does not prepare teachers to use effective reading instruction

The 2005 NITL report concluded that teachers were not 'adequately equipped with the evidence-based knowledge and practical strategies' to teach essential reading skills.[45] An audit for the inquiry found that in almost all 34 four-year primary education teaching degree courses, less than 10% of time in compulsory subjects was spent on preparation to teach reading. In half the degree courses, it was less than 5% of time. The audit did not scrutinise the content of the courses, leaving open the question of whether even this small amount of time was spent wisely. In a newspaper interview in 2008, inquiry chairman Ken Rowe said nothing had changed in universities since the inquiry because:

> Higher education providers of education and those who provide ongoing professional development of teachers, with a few exceptions, are still puddling around in postmodernist claptrap about how children learn to read.[46]

Several other Australian studies support this assessment. Three-quarters of pre-service teachers in a Queensland university reported that they did not feel well prepared to teach reading and had been given no training in phonics instruction.[47] In a survey of pre-service teachers in Victoria, more than half said their courses advocated whole language approaches to teaching reading, and expressed low confidence in their ability to teach reading to students with learning disabilities and Indigenous students.[48] A national survey of beginning teachers found many were unsatisfied with their practical preparation for teaching reading, the main criticism being 'too much theory, not enough instruction.'[49]

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Why are teachers not taught or required to use effective evidence-based reading instruction?

The two major influences on teaching methods in schools are the university teacher education faculties that graduate all teachers in Australian schools—state, Catholic and independent—and government education departments, particularly state governments. Even though much of the debate over reading standards and quality teaching occurs in the public sphere, history shows that the battle of ideas in the media has little sustained effect on the priorities of academia. Some academics are derisive about public debates over education, claiming that such debates are manufactured crises for political gain and bemoan the popular appeal of 'common sense language' instead of 'scholarly, academic writing.'[50]

There appears to be an ideological hegemony among university education faculties and state education departments that actively or passively works against implementing effective evidence-based reading instruction. In many cases, the commitment to whole language is vested or professional—the result of a career built on promoting whole language pedagogies, seemingly disregarding the accumulation of evidence

against it. Eminent researcher Margot Prior has likened it to 'religious' devotion.[51] For some, however, whole language philosophy and teaching of reading are enclosed in a broader economic and cultural ideology of social and economic equality.[52]

Another important factor in the research-to-practice gap in reading instruction is that scientific knowledge is not privileged in education research, practice or policy development. Levin identifies four main problems emerging from research on 'knowledge mobilisation' from research to practice:

1. poor links between researchers and users
2. lack of interest and outright resistance to research evidence
3. inadequate research
4. likelihood that policy will be influenced by politics rather than evidence.[53]

An anti-science sentiment prevails in some Australian education faculties and teacher professional organisations, especially those that promote whole language.

All these ring true for reading instruction in Australia. Classroom teachers do not have time to keep up with new research findings through primary sources such as academic journals. Additionally, they often do not have the scientific expertise to translate these findings and apply them in the classroom, as is true for the large majority of people. Few teacher education courses provide pre-service teachers with the scientific and statistical skills to evaluate and interpret data, to understand research methodology, and to critically appraise studies of different kinds.[54] Research in the United States shows that teachers see scientific research evidence as just another type of information, and often as 'less influential' than information from colleagues and their own experiences.[55] This can be seen as rational in some ways because much research conducted in education faculties is of low quality, dominated by case studies, self-reporting, small samples, and weak methodology. Randomised control trials—the 'gold standard' for scientific research—are relatively rare in education. [56] Of the 137 conference papers available online from the 2012 Australian Association for Research in Education (AARE) conference, only one reported research that used scientific methodology, but even it did not use random allocation.[57] Internationally, reading instruction is a notable exception, with an accumulated body of evidence from the United States, the United Kingdom and Canada consisting of large controlled trials and meta-analyses of replicable and longitudinal studies.[58]

In Australia, as elsewhere, the best educational practice and policy research tends to emanate from departments of psychology and economics.[59] An anti-science sentiment prevails in some Australian education faculties and teacher professional organisations, especially those that promote whole language.[60] The English Teachers Association of NSW bases its position statement on teaching reading on 'psycholinguistic research, evolutionary theory and linguistic phenomena such as homographs and homonyms.'[61] For example, University of Wollongong Professor Brian Cambourne denies the superiority of the scientific method and criticised the NITL for restricting its literature review to scientific studies. He suggested the inquiry should have included qualitative research that answered questions like, 'What's happening and what do these happenings mean?' and 'How does Mrs Smith set up her kindergarten classroom so that children learn to listen closely to what each other says?'[62]

The resistance of university education faculties to embracing effective evidence-based reading instruction might be mitigated if government education departments—employers of 65% of Australia's teachers and creators of curriculum, assessment and policy—were a positive influence on quality teaching methods. That they have not been a positive influence to date is not for lack of investment of financial and human resources, but because of a rather misplaced and misguided effort.

This essay will not chronicle government policies on the teaching of reading, but several recent examples at the federal and state level illustrate the point. One of the key education reforms of the Gillard government was the development of a national curriculum. Although the draft

literacy curriculum referred to all elements of effective evidence-based instruction, Learning Difficulties Australia pointed out that it had a number of important weaknesses in its conception of initial instruction, particularly the appropriate sequence of content, and did not provide clear guidelines for skills progression.[63] These weaknesses remain in the published curriculum.[64] Another major policy announcement of the federal government was a 'Reading Blitz,' reportedly at a cost of $1.1 billion—the equivalent of $8,000 for each primary school teacher in Australia.[65] The public information does not indicate that this policy required schools to implement effective evidence-based reading instruction. Specific educational terms such as 'running records' and 'phonemics' are used inappropriately and ambiguously, suggesting a lack of expertise in policy development.[66] Every primary school teacher in Australia could be provided with extensive professional development in initial and remedial reading instruction for a fraction of the cost of the Reading Blitz policy.

In the last several years, there has been a concerted effort by the NSW government to develop strong evidence-based policy on teaching, but with mixed results. It has established a research body —the Centre for Educational Statistics and Evaluation—to gather and synthesise education research to inform policy. A Ministerial Advisory Group on Literacy and Numeracy (MAGLAN) was convened to provide expert guidance, particularly in early literacy. Unfortunately, the MAGLAN report exemplifies the flawed approach to developing policy on reading instruction that has plagued Australia's school system. The advisory group members, although distinguished educators and researchers, were not experts in the specific scientific field of reading instruction. Consequently, the report contained a number of misrepresentations of research on reading, including conflation of precise and non-interchangeable educational terms.[67] This has serious ramifications—if policy is to have the desired effect it must be based on the most accurate information. There is a new website called 'Effective Practices in Literacy and Numeracy,' but it does not provide any guidance to schools on effective evidence-based reading instruction, or any practical advice on how to identify and support students with reading difficulties.[68]

NSW is not atypical; policy development on reading and literacy in all governments is consistently undermined by the vagaries of the political cycle, a reliance on non-expert 'experts,' and misallocation of vital resources into ineffective programs, partly because of persistent failure to evaluate programs properly.[69] This cycle must be broken if the successes seen in individual schools are to be shared across the country.

What can be done?

This essay has not touched on the role of children's home environments in reading development, the importance of which is irrefutable.[70] In terms of policy, however, the immediate benefits will be gained from focusing efforts on providing the highest quality education. Ensuring that all children have the opportunity to receive effective evidence-based reading instruction requires changes at three levels—governments, universities, and schools.

Governments must cease wasting money on ineffective 'add-on' programs that add to the burden of schools. If more money is to be spent on schools, it should be spent on up-skilling classroom and learning support teachers. The Response to Intervention (RtI) model is being under-utilised, but is potentially a more effective and cost-effective approach for schools to identify and offer timely intervention for struggling readers.

Although it is tempting to suggest that all schools should be required to implement government-designated reading instruction programs that meet the criteria of effective evidence-based reading instruction, such a proposition carries the risk of any monolithic policy—one fails, all fail. Some level of professional autonomy must be allowed to schools. One way around this problem is the British government's policy of creating a list of approved reading programs from which schools can choose. Schools wishing to use a different program must provide justification, including support from parents.

Neither the federal government's established bodies for quality control in higher education—the

Australian Institute for Teaching and School Leadership (AITSL) and the Tertiary Education Quality Standards Agency (TEQSA)—nor the various state-based teacher registration authorities have proven themselves capable of ensuring that teacher education courses are producing graduate teachers with the necessary skills to teach reading effectively. Positive steps are being taken at federal and state levels to lift the calibre of pre-service teachers by making it more difficult to enrol in teacher education courses, but this does not guarantee the quality of the training they receive.

Good quantitative research is expensive but ultimately less expensive than ineffective programs. Research funding in Australia should prioritise scientifically valid, replicable and reliable studies.

Arguably, every teacher education course should have, at minimum, a one semester subject on the five 'big ideas' of effective reading instruction, and practical training in how to teach them. Again, the most obvious answer is to enforce stronger requirements on universities through tied funding but, as with schools, increased government intervention can do more harm than good. A consumer, market-driven approach might be preferable. The National Council on Teacher Quality is an independent non-profit organisation that has evaluated almost all of the more than 1,300 teacher education courses in the United States and rated them on various criteria.[71] Prospective teacher education candidates can use this information to decide where to enrol, just as schools can use it in their hiring decisions. Such a project is feasible in Australia, with the government compelling universities to provide the information and data required by any organisation that undertook it.

Research funding bodies must be more discerning about the research they support. Educational research is not of a routinely high standard in Australia and therefore rarely influential. Relatively little funding is available for educational research—about $240 million was spent on education research in 2008–09 (latest published statistics), compared to more than $4 billion on health.[72] The enormous interest in international assessments like the Program for International Student Assessment (PISA), and widespread analysis of the data, shows an appetite and respect for good research in education. Yet such surveys are not a substitute for high quality experimental studies. Good quantitative research is expensive but ultimately less expensive than ineffective programs. Research funding in Australia should prioritise scientifically valid, replicable and reliable studies.

For their part, schools must be less willing to accept as inevitable the large numbers of students who do not learn to read. Without diminishing the importance of the role of parents, it is schools that are charged with the major responsibility for children's academic education. Where schools have taken this responsibility seriously, and taken all possible steps to achieve their goal, success has followed.

Conclusions

The current entrenched rate of illiteracy among Australian children is unnecessary and avoidable. Poorly conceived government policies and university education faculties wedded to out-dated and unproven teaching methods have each contributed to the situation. Billions of dollars have been spent, only to have thousands of children complete school without the most fundamental skill required for a happy, productive life—the ability to read. Realistically, there will always be some children who struggle to learn to read, but with effective instruction and timely intervention, the number of children who need ongoing support can be drastically minimised.

Endnotes

1 NSW Auditor-General, *Improving Literacy and Numeracy in NSW Public Schools: Department of Education and Training* (Sydney: Audit Office of NSW, 2008); Victorian Auditor-General, *Literacy and Numeracy Achievement—Victorian Auditor General's Report February 2009* (Melbourne: Victorian Government Printer, 2009); Australian National Audit Office, 'National Partnership Agreement on Literacy and Numeracy,' website; Productivity Commission, *Schools Workforce Research Report* (Melbourne: Productivity Commission, 2012).

2 Australian National Audit Office, 'National Partnership Agreement on Literacy and Numeracy,' website; Adam Rorris, Paul Weldon, Adrian Beavis, Phillip McKenzie, Meredith Bramich, and Alana Deery, *Assessment of Current Process for Targeting of Schools Funding to Disadvantaged Students: A Report Prepared for The Review of Funding for Schooling Panel* (Melbourne: Australian Council for Educational Research (ACER), 2011).

3 Andrew Leigh and Chris Ryan, 'Long-Run Trends in School Productivity: Evidence from Australia,' *Education Finance and Policy* (Canberra: Research School of Economics, Australian National University, 2011); Sue Thomson and Lisa de Bortoli, *Challenges for Australian Education: Results from PISA 2009* (Melbourne: Australian Council for Educational Research (ACER), 2010).

4 NSW Auditor-General, *Improving Literacy and Numeracy in NSW Public Schools*, as above; NSW Auditor-General, *Improving the Literacy of Aboriginal Students in NSW Public Schools: Department of Education and Training* (Sydney: Audit Office of NSW, 2012); Productivity Commission, *Overcoming Indigenous Disadvantage—Key Indicators 2011* (Melbourne: Productivity Commission, 2011); DEEWR (Department of Education, Employment and Workplace Relations), *Teaching and Learning—Maximising Our Investment in Australian Schools*, References Committee (Canberra: Commonwealth Parliament of Australia, 2013).

5 DEST (Department of Education, Science and Training), *National Inquiry into the Teaching of Literacy (NITL)—Teaching Reading: Report and Recommendations* (Canberra: Commonwealth of Australia, 2005); Louisa Moats, *Whole Language Hi-Jinks: How to Tell When 'Scientifically-Based Reading Instruction' Isn't* (Washington, DC: Thomas B. Fordham Institute, 2007); Max Coltheart and Margot Prior, *Learning to Read in Australia*, Occasional Paper 1/2007 (Canberra: Academy of Social Sciences in Australia, 2007); Kevin Wheldall, 'Effective Instruction for Socially Disadvantaged Low-Progress Readers: The Schoolwise Program,' *Australian Journal of Learning Difficulties* 14 (2008), 151–170.

6 Mark Carter, Jennifer Stephenson, and Iva Strnadová, 'Reported Prevalence by Australian Special Educators of Evidence-Based Instructional Practices,' *Australasian Journal of Special Education* 35 (2011), 47–60; Max Coltheart and Kevin Wheldall, 'Reading Wars?' *Teacher* (August 2004), 22; Marion de Lemos, 'Effective Strategies for the Teaching of Reading: What Works, and Why,' *Australian Journal of Learning Disabilities*, 10:3–4 (2005), 11–17.

7 Maria Mroz, 'Meeting the recommendations of the Bercow Report: The challenges and the potential within initial teacher education,' *Child Language Teaching and Therapy* 28 (2012), 309–324.

8 Nell K. Duke and Meghan K. Block, 'Improved Reading in the Primary Grades,' *Future of Children* 22:2 (Fall 2012), 55–72.

9 Claire McLachlan and Alison Arrow, 'Literacy in the Early Years in New Zealand: Policies, Politics and Pressing Reasons for Change,' *Literacy* 45:3 (2011), 126–133; William E. Tunmer, James W. Chapman, Keith T. Greaney, Jane E. Prochnow, and Alison W. Arrow, *Why the New Zealand National Literacy Strategy Has Failed and What Can Be Done About It* (Palmerston North, New Zealand: Massey University Institute of Education, 2013); Sheilpa Patel, 'Literacy at Risk: Why Effective Literacy Practice is Not Effective,' *Waikato Journal of Education* 15:3 (2010), 51–68; Justine Ferrari, 'A decade of lost action on literacy,' *The Australian* (22 December 2012).

10 Australian Curriculum, Assessment and Reporting Authority, 'Literacy,' website.

11 William Louden, Mary Rohl, Caroline Barratt Pugh, Claire Brown, Trevor Cairney, Jess Elderfield, Helen House, Marion Meiers, Judith Rivalland, and Ken Rowe, *In Teachers' Hands: Effective Literacy Practices in the Early Years of Schooling* (Mount Lawley, WA: Edith Cowan University, 2005).

12 Marilyn J. Adams, in G. Reid Lyon, Sally E. Shaywitz, Bennet A. Shaywitz, and Vinita Chhabra (eds), 'Evidence-Based Reading Policy in the United States: How Scientific Research Informs Instructional Practices,' *Brookings Papers on Education Policy* 8 (2005), 209–250; Gregory C.R. Yates, 'Roadblocks to Scientific Thinking in Educational Decision Making,' *Australasian Journal of Special Education* 32:1 (2008), 125–137.

13 David L. Share, 'Phonological Recoding and Self-Teaching: Sine Qua Non of Reading Acquisition,' *Cognition* 55 (1995), 151–218; Anne Castles, Max Coltheart, Linda Larsen, Pip Jones, Steven Saunders, and Genevieve McArthur, 'Assessing the Basic Components of Reading: A Revision of the Castles and Coltheart Test with New Norms,' *Australian Journal of Learning Difficulties* 14:1 (2009), 67–88.

14 Ken S. Goodman, *What's Whole in Whole Language* (Berkeley, California: RDR Books, 2005); Frank Smith, *Understanding Reading*, sixth ed. (Taylor & Francis e-library, 2010).

15 English Teachers Association of NSW, 'On Reading and Phonics' (2011); Keith E. Stanovich, 'Concepts in Developmental Theories of Reading Skill: Cognitive Resources, Automaticity and Modularity,' *Developmental Review* 10 (1990), 72–100; David L. Share, 'Phonological Recoding and Self-Teaching,' as above.

16 Marilyn J. Adams, in G. Reid Lyon, et al. 'Evidence-Based Reading Policy in the United States,' as above; Max Coltheart and Margot Prior, *Learning to Read in Australia*, Occasional Paper 1/2007 (Canberra: Academy of Social Sciences in Australia, 2007).

17 William H. Rupley, Timothy R. Blair, and William D. Nichols, 'Effective Reading Instruction for Struggling Readers: The Role of Direct/Explicit Teaching,' *Reading & Writing Quarterly* 25:2–3 (2009), 125–138; William H. Teale, Kathleen A. Paciga, and Jessica L. Hoffman, 'Beginning Reading Instruction in Urban Schools: The Curriculum Gap Ensures a Continuing Achievement Gap,' *The Reading Teacher* 61:4 (2007), 344–348.

18 DEST (Department of Education, Science and Training), *National Inquiry into the Teaching of Literacy (NITL)—Teaching Reading*, as above; Gregory C.R. Yates, 'Roadblocks to Scientific Thinking in Educational Decision Making,' *Australasian Journal of Special Education* 32:1 (2008), 125–137; Jim Rose, *Independent Review of the Teaching of Early Reading: Final Report* (Nottingham, United Kingdom: Department for Education and Skills, 2006); National Institute of Child Health and Human Development, *Report of the National Reading Panel—Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and its Implications for Reading Instruction*, NIH Publication No. 00–4769 (Washington, DC: US Government Printing Office, 2000).

19 William H. Rupley, Timothy R. Blair, and William D. Nichols, 'Effective Reading Instruction for Struggling Readers: The Role of Direct/Explicit Teaching,' *Reading & Writing Quarterly* 25:2–3 (2009), 125–138; Susan Sonnenschein, Laura M. Stapleton, and Amy Benson, 'The Relation Between the Type and Amount of Instruction and Growth in Children's Reading Competencies,' *American Educational Research Journal* 47:2 (2010), 358–389; House of Representatives Standing Committee on Education and Training, *Boys Getting it Right: Report on the Inquiry into the Education of Boys* (Canberra: Commonwealth Parliament of Australia, 2002); Kevin Wheldall and Robyn Beaman, 'Effective Instruction for Older Low-Progress Readers: Meeting the Needs of Indigenous Students,' in Claire Wyatt-Smith, John Elkins, Stephanie Gunn (eds), *Multiple Perspectives on Difficulties in Learning Literacy and Numeracy* (New York: Springer, 2010).

20 Kerry Hempenstall, 'What Does Evidence-Based Practice in Education Mean?' *Australian Journal of Learning Disabilities* 11:2 (2006), 83–92; Louisa Moats, *Whole Language Hi-Jinks: How to Tell When 'Scientifically-Based Reading Instruction' Isn't* (Washington, DC: Thomas B. Fordham Institute, 2007).

21 Linnea C. Ehri, Simone R. Nunes, Steven A. Stahl, and Dale M. Willows, 'Systematic Phonics Instruction Helps Students Learn to Read: Evidence from the National Reading Panel's Meta-Analysis,' *Review of Educational Research* 71 (2001), 393–447; Rhona Johnston and Joyce Watson, *The Effects of Synthetic Phonics Teaching on Reading and Spelling Attainment: A Seven Year Longitudinal Study* (Edinburgh: Scottish Executive Education Department, 2005).

22 Marion de Lemos, 'Effective Strategies for the Teaching of Reading: What Works, and Why,' *Australian Journal of Learning Disabilities* 10:3-4 (2005), 11–17; DEST (Department of Education, Science and Training), *National Inquiry into the Teaching of Literacy (NITL)—Teaching Reading*, as above; Max Coltheart and Margot Prior, *Learning to Read in Australia*, Occasional Paper 1/2007 (Canberra: Academy of Social Sciences in Australia, 2007).

23 Wayne Sawyer, 'Just Add 'Progressivism' and Stir: How We Cook Up Literacy Crises in Australia,' in Brenton Doecke, Mark Howie, and Wayne Sawyer (eds), *Only Connect: English Teaching, Schooling and Community* (Kent Town, SA: AATE/Wakefield Press, 2006), 236–262; Janice B. Turbill and Brian L. Cambourne, 'Looking Back to Look Forward: Understanding the Present By Revisiting the Past: An Australian Perspective,' *International Journal of Progressive Education* 3: 2 (2007), 8–29.

24 Jim Rose, 'Comments on NSW Literacy Teaching Guide: Phonics,' *Learning Difficulties Australia Bulletin* (September/December 2009), 8–9; Peter Westwood, 'A Sound Beginning for Literacy: Three Cheers for NSW,' *Learning Difficulties Australia Bulletin* (September/December 2009), 10–12.

25 Jennifer Buckingham, Kevin Wheldall, and Robyn Beaman, 'Evaluation of a Two-Phase Implementation of a Tier 2 (Small Group) Reading Intervention for Young Low-Progress Readers,' *Australasian Journal of Special Education* (in press).

26 Bridie Smith, 'Results back principal's return to instruction,' *The Age* (10 May 2008); Justine Ferrari, 'Improve the teachers, help the kids,' *The Weekend Australian* (12 December 2012); Sarah Elks, 'Cane country schools teach a lesson in how to defy disadvantage,' *The Weekend Australian* (1–2 June 2013).

27 Kevin Wheldall and Robyn Beaman, 'Effective Instruction for Older Low-Progress Readers: Meeting the Needs of Indigenous Students,' in Claire Wyatt-Smith, John Elkins, and Stephanie Gunn (eds), *Multiple Perspectives on Difficulties in Learning Literacy and Numeracy* (New York: Springer, 2010); Jennifer Buckingham, Robyn Beaman, and Kevin Wheldall, 'A Randomised Control Trial of a Tier-2 Small-Group Intervention ('MiniLit') for Young Struggling Readers,' *Australian Journal of Learning Difficulties* 17:2 (2012), 79–99; Jennifer Buckingham, Robyn Beaman, and Kevin Wheldall, 'A Randomised Control Trial of a MultiLit Small Group Intervention for Older Low-Progress Readers,' *Effective Education*, online first (2012), doi:10.1080/19415532.2012.722038.

28 William Louden, et al. *Teachers Hands: Effective Literacy Practices in the Early Years of Schooling*, as above.

29 Janelle Young, Maureen Walsh, and Lorraine McDonald, 'Revelations on the Teaching of Reading in the Early Years of Schooling,' *Journal of Catholic School Studies* 84:1 (2012), 44–54.

30 Mark Carter, Jennifer Stephenson, and Iva Strnadová, 'Reported Prevalence by Australian Special Educators of Evidence-Based Instructional Practices,' *Australasian Journal of Special Education* 35 (2011), 47–60.

31 Meree Reynolds and Kevin Wheldall, 'Reading Recovery 20 Years Down the Track: Looking Forward, Looking Back,' *International Journal of Disability, Development and Education* 54:2 (2007), 199–223; Karen Nicholas and Faye Parkhill, 'Is Reading Recovery Sustainable Two to Four Years After Discontinuation?' *Education 3–13: International Journal of Primary, Elementary and Early Years Education*, online first (2013), doi:10.1080/03004279.2012.759605;

William E. Tunmer, James W. Chapman, Keith T. Greaney, Jane E. Prochnow, and Alison W. Arrow, *Why the New Zealand National Literacy Strategy Has Failed and What Can Be Done About It* (Palmerston North, New Zealand: Massey University Institute of Education, 2013).

32 Kevin Wheldall, 'Ensuring that All Children Learn to Read,' *Learning Difficulties Australia Bulletin* 43:1 (2011), 5–8; Robert Gersten, et al. *Assisting Students Struggling with Reading: Response to Intervention and Multi-Tier Interventions in the Primary Grades. A Practice Guide* (Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, US Department of Education, 2009).

33 William Louden, et al. *Mapping the Territory: Primary Students with Learning Difficulties: Literacy and Numeracy* (Canberra: Commonwealth Department of Education, Training and Youth Affairs, 2000); Christa E. Van Kraayenoord, 'Response to Intervention: New Ways and Wariness,' *Reading Research Quarterly* 45 (2010), 363–376.

34 ACARA (Australian Curriculum, Assessment and Reporting Authority), *NAPLAN Achievement in Reading, Persuasive Writing, Language Conventions and Numeracy: National Report for 2012* (Sydney: ACARA, 2013); ABS (Australian Bureau of Statistics), *Schools Australia, 2012*, Cat. No. 4221.0.

35 In most schools, the first two hours of the day are devoted to literacy—2 hrs x 5 days x 40 weeks x 3 years = 1,200 hours. This is a conservative estimate. Although it assumes good attendance, it also accommodates low attendance by excluding the three months of schooling before the NAPLAN tests in May.

36 Ruth Fielding-Barnsley and Nola Purdie, 'Teachers' Attitude to and Knowledge of Metalinguistics in the Process of Learning to Read,' *Asia-Pacific Journal of Teacher Education* 33:1 (2005), 65–76; Ruth Fielding-Barnsley, 'Australian Pre-Service Teachers' Knowledge of Phonemic Awareness and Phonics in the Process of Learning to Read,' *Australian Journal of Learning Difficulties* 15:1 (2010), 99–110; Nicole E. Mahar and Amanda L. Richdale, 'Primary Teachers' Linguistic Knowledge and Perceptions of Early Literacy Instruction,' *Australian Journal of Learning Difficulties* 13:1 (2008), 17–37.

37 Personal communication (3 May 2013).

38 Emily Binks-Cantrell, Erin K. Washburn, R. Malatesha Joshi, and Martha Hougen, 'Peter Effect in the Preparation of Reading Teachers,' *Scientific Studies of Reading* 16:6 (2012), 526–536.

39 DEEWR (Department of Education, Employment and Workplace Relations), *Teaching and Learning—Maximising Our Investment in Australian Schools*, References Committee (Canberra: Commonwealth Parliament of Australia, 2013); Geoff N. Masters, *A Shared Challenge: Improving Literacy, Numeracy and Science in Queensland Primary Schools* (Camberwell, Victoria: Australian Council for Educational Research (ACER), 2009).

40 William Louden and Mary Rohl, "'Too many theories and not enough instruction': Perceptions of pre-service teacher preparation for literacy teaching in Australian schools,' *Literacy* 40:2 (2006), 66–78.

41 DEST (Department of Education, Science and Training), *National Inquiry into the Teaching of Literacy (NITL)—Teaching Reading*, as above, 50.

42 Emily Binks-Cantrell, et al. 'Peter effect in the preparation of reading teachers,' as above; Susan Brady, et al. 'First grade teachers' knowledge of phonological awareness and code concepts: Examining gains from an intensive form of professional development and corresponding teacher attitudes,' *Reading and Writing* 22 (2009), 425–455; Elaine A. Cheesman, Joan M. McGuire, Donald Shankweiler, and Michael Coyne, 'First-Year Teacher Knowledge of Phonemic Awareness and its Instruction,' *Teacher Education and Special Education* 32:3 (2009), 270–289; Ruth Fielding-Barnsley and Nola Purdie, 'Teachers' attitude to and knowledge of metalinguistics in the process of learning to read,' *Asia-Pacific Journal of Teacher Education* 33:1 (2005), 65–76; Ruth Fielding-Barnsley, 'Australian Pre-Service Teachers' Knowledge of Phonemic Awareness and Phonics in the Process of Learning to Read,' *Australian Journal of Learning Difficulties* 15:1 (2010), 99–110; Nicole E. Mahar and Amanda L. Richdale, 'Primary Teachers' Linguistic Knowledge and Perceptions of Early Literacy Instruction,' *Australian Journal of Learning Difficulties* 13:1 (2008), 17–37; Rhona Stainthorp, 'W(h)ither phonological awareness? Literate trainee teachers' lack of stable knowledge about the sound structure of words,' *Educational Psychology: An International Journal of Experimental Educational Psychology* 24:6 (2004), 753–765; Erin K. Washburn, R. Malatesha Joshi, and Emily Binks Cantrell, 'Are Pre-Service Teachers Prepared to Teach Struggling Readers?' *Annals of Dyslexia* 61 (2011): 21–43.

43 Nicole E. Mahar and Amanda L. Richdale, 'Primary Teachers' Linguistic Knowledge and Perceptions of Early Literacy Instruction,' *Australian Journal of Learning Difficulties* 13:1 (2008), 17–37.

44 Ruth Fielding-Barnsley, 'Australian Pre-Service Teachers' Knowledge of Phonemic Awareness and Phonics in the Process of Learning to Read,' *Australian Journal of Learning Difficulties* 15:1 (2010), 99–110.

45 DEST (Department of Education, Science and Training), *National Inquiry into the Teaching of Literacy (NITL)—Teaching Reading*, as above, 37.

46 Caroline Milburn, 'Battle lines,' *The Age* (8 September 2008).

47 Ruth Fielding-Barnsley, 'Australian Pre-Service Teachers' Knowledge of Phonemic Awareness and Phonics in the Process of Learning to Read,' *Australian Journal of Learning Difficulties* 15:1 (2010), 99–110.

48 Nicole E. Mahar and Amanda L. Richdale, 'Primary Teachers' Linguistic Knowledge and Perceptions of Early Literacy Instruction,' *Australian Journal of Learning Difficulties* 13:1 (2008), 17–37.

49 William Louden and Mary Rohl, "'Too many theories and not enough instruction" as above.

50 Susanne Gannon and Wayne Sawyer, "Whole language' and moral panic in Australia,' *International Journal of Progressive Education* 3:2 (2007) 30–51; Brenton Doecke and Ginette Delandshere, 'Editorial: What Counts as Research in English Literacy Education?' *English Teaching: Practice and Critique* 6:3 (2007), 1–3.

51 Jane Cadzow, 'War of Words,' *Good Weekend* (4 October 2003).

52 Allan Luke and Susan Grieshaber, 'New adventures in the Politics of Literacy: An Introduction,' *Journal of Early Childhood Literacy* 4:1 (2004), 5–9; Susanne Gannon and Wayne Sawyer, "Whole language" as above.

53 Ben Levin, 'To Know Is Not Enough: Research Knowledge and Its Use,' *Review of Education* 1:1 (2013), 2–31.

54 Kerry Hempenstall, 'What Does Evidence-Based Practice in Education Mean?' *Australian Journal of Learning Disabilities* 11:2 (2006), 83–92.

55 Ben Levin, 'To Know Is Not Enough,' as above.

56 Daniel Willingham, *When Can You Trust the Experts? How to Tell Good Science from Bad in Education* (San Francisco: Jossey-Bass, 2012); Mark Carter and Kevin Wheldall, 'Why Can't a Teacher Be More Like a Scientist? Science, Pseudoscience and the Art of Teaching,' *Australasian Journal of Special Education* 32:1 (2008), 5–21; Kerry Hempenstall, 'What Does Evidence-Based Practice in Education Mean?' as above.

57 AARE 2012 Conference Proceedings and Program, website. Several quantitative studies used non-survey data but these studies did not have comparison groups. Most studies presenting quantitative data were from questionnaires or surveys.

58 Meree Reynolds, Kevin Wheldall, and Alison Madelaine, 'What recent reviews tell us about the efficacy of reading interventions for struggling readers in the early years of schooling,' *International Journal of Disability, Development And Education* 58:3 (2011), 257–286; Jim Rose, *Independent Review of the Teaching of Early Reading: Final Report* (2000); National Institute of Child Health and Human Development, *Report of the National Reading Panel—Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*, NIH Publication No. 00–4769 (Washington, DC: US Government Printing Office, 2000).

59 Kevin Wheldall and Linda Siegel, 'Editorial,' *Educational Psychology: An International Journal of Experimental Educational Psychology* 24:6 (2005), 723–725; Lorraine Dearden, Stephen Machin, and Anna Vignoles, 'Economics of Education Research: A Review and Future Prospects,' *Oxford Review of Education* 35:5 (2009), 617–632.

60 Mark Carter and Kevin Wheldall, 'Why Can't a Teacher Be More Like a Scientist? Science, Pseudoscience and the Art of Teaching,' *Australasian Journal of Special Education* 32:1 (2008), 5–21; Kerry Hempenstall, 'What Does Evidence-Based Practice in Education Mean?' *Australian Journal of Learning Disabilities* 11:2 (2006), 83–92.

61 English Teachers Association of NSW, 'On reading and phonics' (2011).

62 Brian Cambourne, 'My Response to the National Inquiry: Disappointed, Conned and Cynical,' as above.

63 Lyndsey Nickels, 'Response from LDA to the draft Australian Curriclum, with specific reference to the sections of the English Curriculum relating to the teaching of beginning reading,' *Learning Difficulties Australia Bulletin* 42:2 (2010), 3–5.

64 Margaret Cameron, 'First Impressions of ACE,' *Learning Difficulties Australia Bulletin* 43:1 (2011), 15–17.

65 ABC News, 'Gillard unveils $1.1bn reading blitz' (24 February 2013); ABS (Australian Bureau of Statistics), *Schools Australia 2012*, Cat. No. 4221.0 (134,000 primary teachers).

66 'National Reading Blitz to Boost Literacy Standards,' website.

67 Jennifer Buckingham, 'Mistakes writ large if reading goes wrong,' *The Sydney Morning Herald* (7 May 2012); Ministerial Advisory Group on Literacy and Numeracy, *Report on the Outcomes of Consultation: Literacy and Numeracy Action Plan—Initial Framework*.

68 'Effective Practice in Literacy and Numeracy,' website (Centre for Education Statistics and Evaluation (CESE)).

69 Adam Rorris, Paul Weldon, Adrian Beavis, Phillip McKenzie, Meredith Bramich, and Alana Deery, *Assessment of Current Process for Targeting of Schools Funding to Disadvantaged Students: A Report Prepared for the Review of Funding for Schooling Panel* (Melbourne: Australian Council for Educational Research (ACER), 2011)); Productivity Commission, *Schools Workforce Research Report* (Melbourne: Productivity Commission, 2012).

70 Jennifer Buckingham, Robyn Beaman, and Kevin Wheldall, 'Why Poor Children Are More Likely to Become Poor Readers: The Early Years,' *Educational Review*, online first (2013), doi:10.1080/00131911.2013.795129.

71 Julie Greenberg, Arthur McKee, and Kate Walsh, *Teacher Prep Review: A Review of the Nation's Teacher Preparation Programs* (Washington, DC: National Council on Teacher Quality, 2013).

72 ABS (Australian Bureau of Statistics), *Research and Experimental Development, All Sector Summary, Australia, 2008–09*, Cat. No. 8112.0, Table 11.