

On what basis should educational decisions be made?

Dr Kerry Hempenstall.

The introduction of Direct Instruction programs in Far North Queensland and elsewhere in Australia has been heavily criticised in recent times. Most of the criticisms argue that DI is either ineffective or inappropriate for indigenous students in Australia. I wish to make the case that DI has a surprisingly long history of use in Australia, and has very strong research supporting its usefulness across a wide range of student characteristics, including indigeneity. I also argue that decisions about what constitutes worthwhileness should be made on the basis of evidence rather than on ideology

The Direct Instruction model has a relatively long history in reading education, the first program having been published in 1969. However, there has been surprisingly little serious attention paid to it from both the educational bureaucracy and the educational research community, despite its strong body of supportive empirical evidence. Reports of Operation Follow Through (Engelmann, Becker, Carnine, & Gersten, 1988; Grossen, 1996), and the studies reported in meta-analyses by White (1988) and by Adams and Engelmann (1996) have not been accorded the attention that might have been expected. Research on Direct Instruction programs in general has not been widespread among independent researchers, which is surprising given its long history of programs with a strong emphasis on explicit systematic teaching and on phonics in reading. These emphases have been adopted subsequently by many educational program designers, and it is these more recent derivative programs that tend to be evaluated by researchers.

However, this anomaly has been part of a long lamented and broader malaise - the failure of research-based knowledge to have an impact upon educational decision-making (Carnine, 1995; Hempenstall, 1996, 2006; Stanovich, 1994, Stone, 1996). It's hardly a revelation to argue that the adoption of evidence-based practice (EBP) in some other professions is far advanced in comparison to its use in education. It is a change that is evident in fields other than education, for example, the rise of *Evidence-Based Medicine* in patient care (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996), and *Empirically Validated Treatment* in psychotherapy (American Psychological Association, 1993). These changes have been wrought despite significant resistance from entrenched traditionalists in their respective professions. However, as these principles have been espoused in medicine and psychology since the early nineties, a new generation of practitioners have been exposed to evidence-based practice (EBP) as the normal standard for practice. This has occurred among young practitioners because their training has emphasized the centrality of evidence in competent practice.

Research and reports on reading

In the classroom, unfortunately, there are few signs of this sequence occurring. Most teachers-in-training are not exposed to either the principles of EBP (unless in a dismissive aside) or to the practices that have been shown to be beneficial to student learning, such as the principles of instructional design and effective teaching, explicit phonological instruction, and student management approaches that might be loosely grouped under a cognitive-behavioural banner.

At the policy level, at least, there has been a marked reduction of education myopia in the USA and Great Britain, though, as yet, not strongly in Australia. Evoking a sense of cautious optimism is the gradual pressure for change spreading across those nations using written alphabetic languages. The similarity of recommendations among numerous national and state reports in the USA (for example, those of the National Institute of Child Health and Human Development (Lyon, 1998), the National Reading Panel (National Reading Panel, 2000), the American Institutes for Research (1999), the National Research Council (Snow,

Burns, & Griffin, 1998), the Texas Reading Initiative (1996), and the National Early Literacy Panel (2009) has demonstrated the considerable consensus existing about the crucial elements of reading development and instruction. The importance to successful instruction of the alphabetic principle has been strongly asserted. The extra traction gained by systematic synthetic phonics instruction over more ad hoc, loosely specified phonics approaches is clearly noted in these reports. The impact on students of such careful explication of the code can be described as inoculative against reading failure. In this sense, it parallels the use of a vaccine to evince immunity to a specific disease - a public health measure considered worthwhile for all, even though only some of the population may be at risk.

These recommendations for systematic synthetic phonics instruction are consistent with the conclusions reached by many individual researchers (Baker, Kameenui, Simmons, & Stahl, 1994; Bateman, 1991; Blachman, 1991; Felton & Pepper, 1995; Foorman, 1995; Foorman, Francis, Beeler, Winikates, & Fletcher, 1997; Johnston, McGeown, & Watson, 2012; Moats, 1994; Simmons, Gunn, Smith, & Kameenui, 1995; Singh, Deitz, & Singh, 1992; Spector, 1995; Tunmer & Hoover, 1993; Weir, 1990). Analysis of research into phonics since the report of National Reading Panel was presented by Brady (2011), and confirmed the original findings. This approach recognises the demands of mastering an alphabetically-based writing system, and initially focuses upon teaching the sounds employed in words, their corresponding graphemes, and the processes of blending and segmenting.

In Britain, the National Literacy Strategy (Department of Education and Employment, 1998) was released to all primary schools, requiring them to abandon the Whole Language approach to reading. Components of the former system, such as teaching students to rely on context clues to aid word reading, were discredited in the Strategy, and explicit phonics instruction was mandated from the earliest stages of reading instruction. “There must be systematic, regular, and frequent teaching of phonological awareness, phonics and spelling” (Department for Education and Employment, 1998, p.11). Unfortunately, the strong resistance to such explicit teaching led to substantially less instructional change than was anticipated, and correspondingly less improvement in national literacy figures. In 2006, the Primary Framework for Literacy and Mathematics (Primary National Strategy, 2006) was released, updating its 1998 predecessor, and mandating practice even more firmly onto an evidence base. In particular, it withdrew its imprimatur from the 3-cueing system (Hempenstall, 2003) approach to reading, and embraced the Simple View (Hoover & Gough, 1990) of reading that highlights the importance of decoding as the pre-eminent strategy for saying what’s on the page. Under the 3-cueing system, making meaning by any method (pictures, syntactic, and semantic cues) took precedence over decoding as the prime strategy. The new 2006 Strategy mandates a synthetic phonics approach, in which letter–sound correspondences are taught in a clearly defined sequence, and the skills of blending and segmenting phonemes are assigned high priority. This approach contrasts with the less effective analytic phonics, in which the phonemes associated with particular graphemes are not pronounced in isolation (i.e., outside of whole words). In the analytic phonics approach, students are asked to analyse the common phoneme in a set of words in which each word contains the phoneme being introduced (Hempenstall, 2001). The lesser overall effectiveness of analytic phonics instruction may be due to a lack of sufficient systematic practice and feedback usually required by the less able reading student (Adams, 1990).

In Australia, the National Enquiry into the Teaching of Literacy (Department of Education, Science, and Training, 2005). recommendations exhorted the education field to turn towards science for its inspiration. For example, the committee argued strongly for empirical evidence to be used to improve the manner in which reading is taught in Australia.

“In sum, the incontrovertible finding from the extensive body of local and international evidence-based literacy research is that for children during the early years of schooling (and subsequently if needed), to be able to link their knowledge of spoken language to their knowledge of written language, they must

first master the alphabetic code – the system of grapheme-phoneme correspondences that link written words to their pronunciations. Because these are both foundational and essential skills for the development of competence in reading, writing and spelling, they must be taught explicitly, systematically, early and well” (p.37).

Perhaps extra impetus for similar reform in Australia has arisen from reports such as the *Parents’ Attitudes to Schooling* from the Department of Education, Science and Training (2007). Among the findings was that only 37.5 per cent of the surveyed parents believed that students leave school with adequate literacy skills. Generally, the impact of state and national testing has led to greater transparency concerning how our students fare in their literacy development. Media attention on these findings and on the occasional litigation have focussed community attention, and (thereafter) renewed government attention to the issue of reform.

From a theoretical perspective, each of the National Reading Panel (2000) recommended foci for reading instruction (phonemic awareness, phonics, fluency, vocabulary, comprehension) is clearly set out and taught in Direct Instruction literacy programs. These same instructional features were endorsed in the report of the National Enquiry into the Teaching of Literacy. An examination of the program teaching sequences in, for example, the *Reading Mastery* (Engelmann & Bruner, 1988) and *Corrective Reading* (Engelmann, Hanner, & Johnson, 1999) texts attests to their comprehensive nature.

However, these necessary elements are only the ingredients for success. Having all the right culinary ingredients doesn’t guarantee a perfect soufflé. There are other issues, such as what proportion of each ingredient is optimal, when should they be added, how much stirring and heating is necessary? Errors on any of these requirements lead to sub-optimal outcomes.

So, it is with literacy programs. “Yet there is a big difference between a program based on such elements and a program that has itself been compared with matched or randomly assigned control groups” (Slavin, 2003, p.15). Just because a program has most, or all, of the elements doesn’t guarantee that it will be effective necessarily. Engelmann (2004) points to the logical error of inferring a whole based upon the presence of some or all of its elements. The logic error is seen in the following If a dog is a Dalmatian, it has spots. *Therefore, if a dog has spots, it is a Dalmatian* (Engelmann, 2004, p.34). In this simile, the Dalmatian represents programs known to be effective with students. It is possible to analyse the content of these programs, and then assume incorrectly that the mere presence of those characteristics is sufficient to ensure effectiveness. This ignores the orchestration of detail that also helps determine effectiveness. Engelmann is thus critical of merely “research-based” programs, that is, programs constructed only to ensure each respected component is somewhere represented in the mix.

Reading First was a massive program in the USA designed to improve literacy outcomes for disadvantaged students in the first four years of schooling. Early reports (Office of Management and Budget, 2007) indicated that it had a positive impact nationally; however, a criticism of it is that the criterion for acceptability of the programs used was diluted. Reid Lyon, the primary architect of Reading First, was critical of the modification of his plan that funding should be provided only for programs with proven effectiveness – to the easier-to-meet criterion that programs had only to be based on scientifically based reading research (Shaughnessy, 2007). A possible reason for this Department of Education decision relates to the lack of well-designed studies of reading instruction. According to Slavin (2007), there are only two beginning programs generally acknowledged to have strong empirical evidence of effectiveness: Success for All and Direct Instruction. It was considered politically unacceptable to allow only two programs to dominate beginning reading to the nation’s disadvantaged children. This decision has other ramifications. It has led to some programs offering only the appearance of being evidence-based, thereby diminishing the potential of the national scheme overall. In fact, the failure of many schools to implement their chosen

programs faithfully was one reason offered for the less than expected effects of Reading First (Pearson, 2010).

In most published reading schemes, program designers assume that teachers know how to structure a lesson effectively when they are provided with some worthwhile content. This assumption is far from universally justified. The content may be research-based, but its presentation may be competent, slipshod, or cursory. Corrective feedback may or may not occur systematically. Mastery by students may or may not be expected. Practice opportunities may or may not be adequate for the population. Regular data-based monitoring may or may not occur. Teacher *creativity* may abound. This loose coupling between content and delivery would horrify an empirically-trained psychologist, as it would a surgeon trained to follow protocols. It also highlights why the crucial element in evaluation is not simply that a program is consistent with scientific findings, but also that it has been demonstrably successful with the target population.

So for a true measure, we must look beyond theoretical acceptability, and examine empirical studies to show that a particular combination of theoretically important elements is indeed effective. The questions become: Has a particular program demonstrated independently replicated effectiveness? For what populations?

The development of criteria for acceptable research evidence is a common element in the re-weighting of empirical research in the professional fields mentioned earlier. In the case of reading, it should make easier the task of convincing the educational community how valuable could be the findings of rigorous research in informing practice. Having established these criteria, it becomes easier to determine which of the plethora of reading programs available do have adequate research support at any given time. Unfortunately, the standard of educational research generally has not been high enough to enable confidence in its findings. Partly, this is due to a preponderance of short-term, inadequately designed studies. When Slavin (2004) examined the American Educational Research Journal over the period 2000-2003, only 3 out of 112 articles reported experimental/control comparisons in randomized studies with reasonably extended treatments.

The examination of existing evidence employing criteria (of various levels of stringency) by a range of groups has supported Direct Instruction as a valuable approach to reading instruction for both regular and struggling readers. For example, the American Federation of Teachers series of documents *Building On The Best, Learning From What Works* (1997) nominates Direct Instruction programs among each of its recommendations across different facets of education: *Seven Promising Reading and English Language Arts Programs, Three Promising High School Remedial Reading Programs, Five Promising Remedial Reading Intervention Program and, Six Promising Schoolwide Reform Programs*.

A report from the American Institutes for Research (1999), *An Educators' Guide to School-Wide Reform*, found that only three programs, Direct Instruction among them, had adequate evidence of effectiveness in reading instruction. In a follow-up evaluation (American Institutes for Research, 2006), 800 studies of student achievement were reviewed involving 22 programs directed at US high-poverty, low-performing schools. The two programs rated most highly were those that offered a high level of manualisation of both curriculum and non-curriculum features. The level of detail and the field testing and rewriting that occurs before these programs are published does not preclude excursions from fidelity, but on average it does attenuate them. The two programs were Engelmann's Direct Instruction and Robert Slavin's Success for All.

Other similarly supportive reviews of Direct Instruction include: *Reading Programs that Work: A Review of Programs for Pre-Kindergarten to 4th Grade* (Schacter, 1999), *Current Practice Alerts* (Council for Exceptional Children, 1999), *Bringing Evidence Driven Progress to Education* (Coalition for Evidence-Based Policy, 2002), *Center for Education Reform: Best Bets* (McCluskey, 2003), *Comprehensive School Reform and Student Achievement: A Meta-analysis* (Borman, 2007; Borman, Hewes, Overman, & Brown,

2002), *Review of Comprehensive Programs* (Curriculum Review Panel, 2004), and *CSRQ Center Report on Elementary School CSR Models* (American Institutes for Research, 2005). More recently, Liem and Martin (2013) summarized:

“A consistent pattern identified in our review points to the effectiveness of Direct Instruction (DI), a specific teaching program, and of specific explicit instructional practices underpinning the program (e.g., guided practice, worked examples) in maximizing student academic achievement. Collectively, studies, reviews, and encompassing meta-analyses (e.g., Borman et al., 2003; Hattie, 2009) show that DI has significantly large effects on achievement” (Liem & Martin, 2013, p.368).

These reports have been influential in drawing attention to the large corpus of supportive research developed over the years indicative of the effectiveness of the Direct Instruction model across a wide range of educational settings. The model is now being implemented with varying degrees of fidelity in increasing numbers of school settings.

Considering the two aspects of reading research described above: the theoretical and the empirical, it is evident that the Direct Instruction model has strengths in each area to support its use. In line with current research findings, the programs focus on critical areas such as phonemic awareness (the ability to decompose the spoken word into its constituent sounds) and letter-sound relationships. The themes critical for struggling students are paid careful attention in the program design. These are adequate lesson frequency (daily), and sufficient daily and spaced practice to reduce the risk of forgetting, immediate correction of errors to guide the student towards mastery, and continuous assessment of progress to validate the effectiveness of the teaching.

It has often been assumed that DI in Australia is a recent happening. In fact there have been numerous programs and research projects in operation since the 1970's. In 1982, Megan Lockery & Alex Maggs published *Direct Instruction Research in Australia: A ten- year analysis*.

I have used Direct Instruction programs successfully in Australian schools since 1983. The programs have been beneficial to a wide range of students, including indigenous students in the Yarra Valley, students with various learning challenges, such as dyslexia, hearing loss, autism spectrum disorder, attention deficit hyperactivity disorder, second language, learning disability. My findings are consonant with a body of research demonstrating that an instructional focus on the task rather than on various learner characteristics continues to be the best option for improving the achievement of those who currently struggle, a result also in concert with the findings of Nation and Hulme (2011) and of Lervåg and Hulme (2009).

In the Far North Queensland project that includes DI programs, there has been a significant and enduring array of criticism. Much of the criticism of DI is ill-informed or mischievous. I've written about many of these criticisms at <https://www.nifdi.org/resources/news/hempenstall-blog/389-why-does-direct-instruction-evoke-such-rancour>. There has also been an assertion that DI involves only basic rote learning and if useful at all, it is only so for very low progress students.

“One of the common criticisms is that Direct Instruction works with very low-level or specific skills, and with lower ability and the youngest students. These are not the findings from the meta-analyses. The effects of Direct Instruction are similar for regular ($d=0.99$), and special education and lower ability students ($d=0.86$), higher for reading ($d=0.89$) than for mathematics ($d=0.50$), similar for the more low-level word attack ($d=0.64$) and also for high-level comprehension ($d=0.54$), and similar for elementary and high school students” (Hattie, 2009, pp. 206-7).

“These studies have confirmed the accumulated findings of decades of other studies showing that students studying with DI have higher achievement scores and stronger growth rates than students studying with other curricula. These results have appeared with reading^{1,2,8,9,10,13,15} and math⁷; in urban^{1,2,7}, rural^{2,8} and suburban^{8,13,15} settings; with middle class high achieving students¹³; with high risk students¹⁶, general education students^{1,2,7,8,9,10,13,15,16} and special education students¹⁵; with schools that are predominantly African American^{1,7,9}, those with substantial numbers of Hispanic students^{2,8,15} and those with large numbers of non-Hispanic whites^{8,13,15}; and with children from pre-school age¹⁰ through middle school⁴. The strong positive results appear in studies examining state test scores⁴, curriculum-based measures^{2,4,8,10} and norm-referenced tests^{1,4,7,9,10}; in the United States as well as in other countries¹¹ and with randomized control trials^{10,13,14} as well as quasi-experimental designs^{1,2,4,7,8,9,11,15} (NIFDI, 2012).

“What is in common across the most promising interventions is their use of extensive professional development, coaching, and cooperative learning. The findings support a conclusion increasingly being made by researchers and policymakers concerned with optimal outcomes for English language learners and other language minority students: Quality of instruction is more important than language of instruction” (Cheung & Slavin, 2012).

So both research and experience emphasise the teaching process rather than the child as the major issue. In DI, failure to learn is viewed as failure to teach effectively, and specific corrective teaching procedures are intrinsic to the programs to redress the problems should lack of progress be observed. The emphasis on teaching quality rather than learner quality makes redundant any explanations of failure based on intelligence, race, readiness, first language, or home background. It is an empowering approach because it acknowledges and reinforces the status and power of teachers to make a real difference to students.

Interestingly, in Australia there was a rise in the adoption of Direct Instruction programs without any state or federal government support. Over the past 20 years, about 350 schools in Victoria have implemented one or more Direct Instruction programs (McGraw Hill, personal communication, June 2007) across basic skill areas, such as language, reading decoding and reading comprehension, spelling, writing, and maths. However, relatively few schools maintain their focus on the DI programs. Many start with an enthusiastic staff member, but fall away when the initiator leaves, loses interest, or the staff adopt a different priority emphasis. The recent publicity on the use of DI in Far North Queensland through Noel Pearson has perhaps raised some awareness of Direct Instruction among educators. However, judging by some of the comments made, there does not appear to be a great understanding of the model.

In more recent times, there has been some interest in Direct Instruction from the federal government - *Working Out What Works* (Hoad, Munro, Pearn, Rowe, & Rowe, 2005), and in the literature review presented to the National Inquiry into the Teaching of Literacy: *A review of the empirical evidence identifying effective interventions and teaching practices for students with learning difficulties in Years 4, 5 and 6* (Purdie & Ellis, 2005). At the state level in Victoria, the Successful Interventions Literacy Research Project (Department of Education, Employment, and Training, 2001) reported favourably upon one such program - the *Corrective Reading* program.

In state education department documents, the former wholesale acceptance of the Whole Language model has sharply declined except for the maintenance of a near-relation, Reading Recovery, as the first line of remediation. It is an expensive intervention, given that it is required by 40-50% of first grade students in Victoria (Office of the Victorian Auditor General, 2003) and funding for it continues to increase each year since 2003 (Office of the Auditor General, 2009). Numerous reviews, such as that by Reynolds and Wheldall (2007), highlight the limitations of that approach in attempting to achieve universal literacy.

It is apparent from research that early intervention (pre-school, Prep/Kinder, Year One) holds the greatest hope for reducing the deleterious effects of serious reading failure currently believed to impede up to 30% of all our students (Harrison, 2002; Livingstone, 2006; Loudon, et al., 2000; Marks & Ainley, 1997) and a substantially higher figure among indigenous students.

Some have argued that even the best efforts of schools cannot adequately compensate for genetic or socioeconomic disadvantage. So, the belief that education can influence a student's life trajectory has been often questioned (Jencks et al., 1972). The Coleman Report (Coleman et al., 1966) and other studies deflated many in the educational community when they argued that what occurred in schools had little impact on student achievement. They considered that the effects on educational outcomes of genetic inheritance, early childhood experiences, and subsequent family environment vastly outweigh school effects. That being the case, there would be little point in stressing a particular curriculum model over any other since the effects would be negligible compared to other variables outside a school's control. While each has a strong effect upon reading development, and neither the influence of genes (Christopher et al., 2013) nor early experiences (Fernald, Marchman, & Weisleder, 2013) should not be minimised, more recent research has challenged the perspective that there are no significant other variables, such as instruction, that can ameliorate the prior influences.

1. Genetic:

Some children find the process of mastering literacy much easier than do others. It is thought that phonological skills are at least partly inherited. However, the potential power of instruction to alter the literacy trajectory of students is increasingly recognised.

“... environmental changes, such as a specific reading intervention, could change the dynamic genetic influences through a possible, unmeasured, gene–environment interplay in the early school years, as well as affect the environmental influence on the general development of reading” (Hart et al., 2013, p. 1980).

2. Socioeconomic:

Marks, McMillan, and Ainley (2004) noted that the effect of socioeconomic background on important educational outcomes has often been put forward to be the major cause of educational failure, leading to the assumption that early educational intervention is likely to be relatively fruitless while social disadvantage continues. However, its influence is considerably smaller than is produced by early achievement in basic skills - literacy in particular. Thus, it is even more important for this cohort that initial literacy instruction is exemplary, that is with strong empirical support.

“Thus, although attending a more academically effective primary school does not eliminate the adverse impacts of multiple disadvantage experienced at a younger age, it can mitigate them by promoting better academic attainment and self-regulation up to age 11 for children who had experienced more disadvantages” (Sammons et al., 2013, p.251).

In *Effective early childhood programmes for disadvantaged children: A systematic review and case studies*, the authors review research on various reading interventions for disadvantaged students. They categorise the reviewed programs into Strong Evidence of Effectiveness, Moderate Evidence of Effectiveness, Limited Evidence of Effectiveness, and Insufficient Evidence of Effectiveness.

“Six early childhood programs produced strong evidence of effectiveness. *Curiosity Corner, Direct Instruction, ELLM, Interactive Book Reading, Let's Begin with the Letter People, Ready Set Leap!*” (Chambers, de Botton, Cheung, & Slavin, 2013, p.325).

A study of 30,000 Florida students in Grades 1-3 found that those using the DI program Reading Mastery earned the highest scores, even for children living in lower socioeconomic (SES) households.

"The study compared the effects of six core reading curricula on oral reading fluency growth, while appraising whether these effects differ by grade level and for children living in lower socioeconomic (SES) households. Success was measured by oral reading fluency (ORF), which correlates positively with standardized measures of reading achievement. ORF is often touted as the best overall indicator of reading proficiency for students in the early stages of learning to read. Overall, students in the Reading Mastery curriculum demonstrated generally greater overall ORF growth than students in other curricula. Also, they more frequently met or exceeded benchmarks for adequate achievement in Grades 1-3". (Crowe, McDonald, & Petscher, 2009).

Is there DI research specifically with Australian indigenous students?

Yes, going back as far as the 1970-80 period. For example, there were such studies in Australia by Hawke, Maggs, & Murdoch, 1978; Kenny, 1980; Maggs & Moore, 1978; 1980; Maggs, Moore, & Baldie, 1978; Maggs, Moore, & Cunliffe, 1980; Maggs, Moore, Hawke, & Cunliffe, 1979. The research found significant benefits for indigenous students; however, there was little take-up of the programs in either mainstream or indigenous education.

“Prior to this (DI) programme, no other programme had consistently demonstrated effective learning outcomes for aboriginal children.” (Kenny, 1980, p.5).

More recently, Wilson’s 2014 review of indigenous education noted that there was good evidence to support the use of DI for these students.

“In the area of phonics and phonemic awareness there are two broad approaches that could be pursued. One approach is to adopt a whole literacy program that includes explicit attention to phonics and phonemic awareness within the context of a broader program. In this area, one of the variations of Direct Instruction is probably the approach with the best research base.” (Wilson, 2014)

Hattie’s analysis was also supportive:

“Professor John Hattie, Director of the Melbourne Education Research Institute, concluded based on his analysis of CYA student 2009 - 13 NAPLAN results that “The program in Cape York shows greater growth than the Australian averages. While there appear to be important school differences, the overall program appears to be making a greater - than - average difference. Persistence in ensuring as complete - as - possible data for achievement and attendance for every student is critical to showing the impact of the program.” (DEET, 2015)

Literacy and Numeracy (NAPLAN 2014) results:

- increased number of students at national minimum standard
- extended number of students in bands above national minimum standard
- more students appearing in the upper two bands of the test results
- students are making nearly twice the gain against the national average rate of progress (although starting from a very low base)
- the number of students performing exceptionally well has increased consistently under the Academy using DI

The Department of Prime Minister and Cabinet (2016):

“Explicit teaching methodologies have shown promising results in the Cape York Academy (CYA) Schools. For example, in 2015 Coen’s entire Year 3 cohort achieved a result above the National Minimum Standard in Numeracy and the Year 5 cohort exceeded the National Minimum Standard in Reading and Numeracy. All CYA schools reported an increase in the number of students with attendance over 90 per cent. Although it’s early days, the Flexible Literacy Programme is showing promise. Students are making progress, their engagement is increasing and the quality of teaching is improving”. ... In 2015, Indigenous Year 5 students in metropolitan areas were, on average, twice as likely to meet national minimum standards in reading as Indigenous students in very remote areas.” (Department of Prime Minister and Cabinet, 2016)

And another report:

“Taken together these are direct and explicit instructional practices we deem as important in the process of literacy and numeracy skill development that may be of vital assistance to Aboriginal students whose achievement is languishing” (Martin, Ginns, Papworth, & Ghasemi-Nejad, 2013, p.288)

So, we return to the enormous advantages for students when explicit (synthetic) phonics programs, such as in DI programs form the foundation stone of initial literacy instruction. Rapid early literacy progress both predicts and usually leads to sustained progress in the absence of non-education impediments, such as disability. Achieving this position has thus far eluded the education system, and much more large scale high quality research and continued advocacy for evidence-based practice are required.

“Some researchers have conceptualized this relationship between strong reading skills, engagement in reading, and development of reading-related and cognitive abilities as a “virtuous circle” (Snowling & Hulme, 2011). Other researchers have described the process by which children who fail to establish early reading skills find reading to be difficult and unrewarding, avoid reading and reading-related activities, and fail to develop reading-related and cognitive abilities as a “vicious circle” that is disastrous for their cognitive development and school achievement (Pulido & Hambrick, 2008). An early start in learning to read is crucial for establishing a successful path that encourages a “lifetime habit of reading” (Cunningham & Stanovich, 1997, p. 94) and for avoiding the decline in motivation for reading that can have devastating effects on reading growth and cognitive development over time” (Sparks, Patton, & Murdoch, 2014, p.209-210).

For a more extensive review of evidence for the usefulness of DI programs, see

<https://www.nifdi.org/resources/news/hempenstall-blog/403-reviews-supporting-direct-instruction-program-effectiveness>

If we are to make rational decisions about how best to support the educational development of disadvantaged students, then evidence should be our primary guide. If decisions are made on other grounds, we risk creating yet another generation of individuals characterised by life-long disadvantage.

Refs:

Adams, G., & Engelmann, S. (1996). *Research on Direct Instruction: 25 years beyond DISTAR*. Seattle, WA: Educational Achievement Systems.

Adams, M. J. (1990). *Beginning to read: Thinking & learning about print*. Cambridge, MA: MIT Press.

- American Institutes for Research. (1999). *An educators' guide to schoolwide reform*. Retrieved from www.aasa.org/Reform/index.htm
- American Institutes for Research. (1999). *An educators' guide to schoolwide reform*. Retrieved from www.aasa.org/Reform/index.htm
- American Institutes for Research. (2005). *CSRQ Center Report on Elementary School Comprehensive School Reform Models*. Retrieved from <http://www.csrq.org/reports.asp>
- American Psychological Association. (1993, October). *Final report of the task force on promotion and dissemination of psychological procedures*. New York: American Psychological Association, Division of Clinical Psychologists (Division 12).
- Baker, S.K., Kame'enui, E.J., Simmons, D. C., & Stahl, S.A. (1994). Beginning reading: Educational tools for diverse learners. *School Psychology Review*, 23, 372-391.
- Bateman, B. (1991). Teaching word recognition to slow-learning children. *Reading, Writing and Learning Disabilities*, 7, 1-16.
- Blachman, B.A. (1991). Early intervention for children's reading problems: Clinical applications of the research in phonological awareness. *Topics in Language Disorders*, 12(1), 51-65.
- Borman, G. (2007). *Taking reform to scale*. Wisconsin Center for Educational Research. from <http://www.wcer.wisc.edu/>
- Borman, G. D., Hewes, G. M., Overman, L. T., & Brown, S. (2002). *Comprehensive school reform and student achievement: A meta-analysis*. Report No. 59. Washington, DC: Center for Research on the Education of Students Placed At Risk (CRESPAR), U.S. Department of Education. from <http://www.csos.jhu.edu./crespar/techReports/report59.pdf>
- Brady, S.A. (2011). Efficacy of phonics teaching for reading outcomes: Indications from post-NRP research. In S.A. Brady, D. Braze., and C. A. Fowler (Eds.), *Explaining individual differences in reading: Theory and evidence*. (pp. 69-96). New York: Psychology Press.
- Carnine, D. (1995). Trustworthiness, usability, and accessibility of educational research. *Journal of Behavioral Education*, 5, 251-258.
- Chambers, B., de Botton, O., Cheung, A., & Slavin, R.E. (2013). Effective early childhood programmes for disadvantaged children: A systematic review and case studies. In B. Spodek & O. Saracho (eds), *Handbook of Research on the Education of Young Children* (3rd ed.). New York: Routledge, pp. 322-331.
- Cheung, A.C.K., & Slavin, R.E. (2012). Learners (ELLs) in the elementary grades: A synthesis of research effective reading programs for Spanish-dominant English language. *Review of Educational Research*, 82(4), 351-395.
- Christopher, M.E., Hulslander, J., Byrne, B., Samuelsson, S., Keenan, J.M., Pennington, B., DeFries, J.C., Wadsworth, S.J., Willcutt, E.G., & Olson, R.K. (2013). Modeling the etiology of individual differences in early reading development: Evidence for strong genetic influences. *Scientific Studies of Reading*, 17(5), 350-368.
- Coalition for Evidence-Based Policy. (2002). *Bringing Evidence Driven Progress to Education: A Recommended Strategy for the U.S. Department of Education*. Council for Excellence in Government's Coalition for Evidence-Based Policy. Retrieved from <http://www.excelgov.org/displayContent.asp?Keyword=prppcEvidence>

- Coleman, J., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfeld, F. D., et al. (1966). *Equality of educational opportunity*. Washington, DC: Department of Health, Education, and Welfare.
- Council for Exceptional Children (1999). *Focussing on Direct Instruction*. Retrieved from http://dldcec.org/alerts/alerts_2.html.
- Crowe, E. C., McDonald, C.C., & Petscher, Y. (2009). Examining the core: Relations among curricula, poverty, and first through third reading achievement. *Journal of School Psychology, 47*, 187– 214.
- Curriculum Review Panel. (2004). *Review of Comprehensive Programs*. Oregon Reading First Center. Retrieved from http://reading.uoregon.edu/curricula/core_report_amended_3-04.pdf
- Department for Education and Employment. (1998). *The National Literacy Strategy: Framework for Teaching*. London: Crown.
- Department of Education and Training. (2015). Cape York Academy Queensland State School Reporting 2014 School Annual Report. Retrieved from <https://cyaaa.eq.edu.au/Supportandresources/Formsanddocuments/Annual%20reports/annual-report-2014.pdf>
- Department of Education, Employment, and Training. (2001). *Successful Interventions Literacy Research Project*. Retrieved from <http://www.eduweb.vic.gov.au/edulibrary/public/curricman/middleyear/research/successfulinterventions.doc>
- Department of Education, Science, and Training. (2005). *Teaching Reading: Report and Recommendations*. National Inquiry into the Teaching of Reading. Australia: DEST.
- Department of Education, Science, and Training. (2007). *Parents' attitudes to schooling*. Canberra: Australian Government. Retrieved from <http://www.dest.gov.au/NR/rdonlyres/311AA3E6-412E-4FA4-AC01-541F37070529/16736/ParentsAttitudestoSchoolingreporMay073.rtf>
- Department of Prime Minister and Cabinet. (2016). *Improving literacy in remote primary schools*. Retrieved from <http://closingthegap.dpmc.gov.au/chapter-02/index.html>
- Engelmann, S. & Bruner, E. C. (1988). *Reading Mastery*. Chicago, Ill: Science Research Associates.
- Engelmann, S. (2004). The dalmation and its spots. *Editorial Projects in Education, 23*(20), 34-35, 48. Retrieved from http://www.edweek.org/ew/ew_printstory.cfm?slug=20engelmann.h23
- Engelmann, S., Becker, W. C., Carnine, D., & Gersten, R. (1988). The Direct Instruction Follow Through model: Design and outcomes. *Education and Treatment of Children, 11*(4), 303-317.
- Engelmann, S., Hanner, S., & Johnson, G. (1999). *Corrective Reading-Series Guide*. Columbus, OH, SRA/McGraw Hill.
- Felton, R.H., & Pepper, P.P. (1995). Early identification and intervention of phonological deficit in kindergarten and early elementary children at risk for reading disability. *School Psychology Review, 24*, 405-414.
- Fernald, A., Marchman, V.A., & Weisleder, A. (2013). SES differences in language processing skill and vocabulary are evident at 18 months. *Psychological Science, 16*(2), 234-238.
- Foorman, B.R. (1995). Research on "the Great Debate": Code-oriented versus Whole Language approaches to reading instruction. *School Psychology Review, 24*, 376-392.

- Foorman, B.R., Francis, D.J., Beeler, T., Winikates, D., & Fletcher, J. (1997). Early interventions for children with reading problems: Study designs and preliminary findings. *Learning Disabilities: A Multidisciplinary Journal*, 8, 63-71.
- Grossen, B. (Ed.). (1996). What was that Project Follow Through? [Special issue] *Effective School Practices*, 15(1), 1-85.
- Harrison, B. (2002, April). Do we have a literacy crisis? *Reading Reform Foundation*, 48. Retrieved from <http://www.rrf.org.uk/do%20we%20have%20a%20literacy%20crisis.htm>
- Hart, S. A., Logan, J. A. R., Soden-Hensler, B., Kershaw, S., Taylor, J., & Schatschneider, C. (2013). Exploring how nature and nurture affect the development of reading: An analysis of the Florida twin project on reading. *Developmental Psychology*, 49(10), 1971-1981.
- Hattie, J. A.C. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. London and New York: Routledge.
- Hawke, H., Maggs, A., & Murdoch, R. (1978). The effects of teaching morphographs on learning to spell, *Special Education*, 13(3), 59-63.
- Hempenstall, K. (1996). The gulf between educational research and policy: The example of Direct Instruction and Whole Language. *Behavior Change*, 13, 33-46.
- Hempenstall, K. (2001). Some issues in phonics instruction. *EducationNews.Org*. Retrieved from <http://www.ednews.org/articles/528/1/Some-issues-in-phonics-instruction-Implicit-and-explicit-phonics-instruction/Page1.html>
- Hempenstall, K. (2003). The three-cueing system: Trojan horse? *Australian Journal of Learning Disabilities*, 8(3), 15-23.
- Hempenstall, K. (2006). What does evidence-based practice in education mean? *Australian Journal of Learning Disabilities*, 11(2), 83-92.
- Hoad, K-A., Munro, J., Pearn, C., Rowe, K.S., & Rowe, K.J. (2005). *Working Out What Works (WOWW) Training and Resource Manual: A teacher professional development program designed to support teachers to improve literacy and numeracy outcomes for students with learning difficulties in Years 4, 5 and 6*. Canberra: Commonwealth Department of Education, Science and Training; and Melbourne: Australian Council for Educational Research.
- Hoover, W. A., & Gough, P. B. (1990). The simple view of reading. *Reading and Writing: an Interdisciplinary Journal*, 2, 127-160.
- Jencks, C. S., Smith, M., Acland, H., Bane, M. J., Cohen, D., Ginits, H., et al. (1972). *Inequality: A reassessment of the effect of family and schooling in America*. New York: Basic Books.
- Johnston, R.S., McGeown, S., & Watson, J.E. (2012). Long-term effects of synthetic versus analytic phonics teaching on the reading and spelling ability of 10 year old boys and girls. *Reading & Writing*, 25(6), 1365-1384.
- Kenny, D. (1980). Direct instruction: An overview of theory and practice. *Journal of the Association of Special Education Teachers*, 15, 12-17.
- Lervåg, A., & Hulme, C. (2009). Rapid automatized naming (RAN) taps a mechanism that places constraints on the development of early reading fluency. *Psychological Science*, 20, 1040-1048.

- Liem, A., & Martin, A. (2013). Direct Instruction. In John Hattie and Eric M. Anderman (Eds.), *International guide to student achievement* (pp. 366-368). New York: Routledge.
- Livingstone, T. (2006, 14 Oct). Rating the system. *The Courier Mail*, p.53.
- Louden, W., Chan, L.K.S., Elkins, J., Greaves, D., House, H., Milton, M., Nichols, S., Rivalland, J., Rohl, M., & van Kraayenoord, C. (2000). *Mapping the territory—Primary students with learning difficulties: Literacy and numeracy* (Vols. 1-3). Canberra: Department of Education Training and Youth Affairs.
- Lyon, G. R. (1998). *Overview of reading and literacy initiatives. Statement to Committee on Labor and Human Resources*. Retrieved from <http://www.nichd.nih.gov/publications/pubs/jeffords.htm>
- Maggs, A., & Moore, J. (1978). Teaching academic skills by direct instructional methods to school-aged aboriginal and non-aboriginal children with learning problems. *The Exceptional Child*, 25, No. 2.
- Maggs, A., & Moore, J. (1980). *Teaching academic skills by direct instruction methods in nine schools for Aboriginal children, final report* (Department of Aboriginal Affairs Program).
- Maggs, A., Moore, H., Hawke, H., & Cunliffe, L. (1979). Aboriginal education? Preparing children for self-determination: A common goal for all children, B.C. *Journal-of Special Education*, 3, No. 4.
- Maggs, A., Moore, J., & Baldie, A.B. (1978). *Direct Instruction: Generalisation and problems*. (Dept. of Aboriginal Affairs, Canberra).
- Maggs, A., Moore, J., & Cunliffe, L. (1980). Direct Instruction programmes in rural schools for aboriginal children (Final Report, Dept. of Aboriginal Affairs, Canberra).
- Marks, G. N., & Ainley, J. (1997). *Reading comprehension and numeracy among junior secondary school students in Australia*. Melbourne: Australian Council for Educational Research.
- Marks, G., McMillan, J., & Ainley, J. (2004, April 20). Policy issues for Australia's education systems: Evidence from international and Australian research. *Education Policy Analysis Archives*, 12(17). Retrieved from <http://epaa.asu.edu/epaa/v12n17>
- Martin, A., Ginns, P., Papworth, B., & Ghasemi-Nejad, M. (2013). Aboriginal/Indigenous students in high school: Understanding their motivation, engagement, academic buoyancy, and achievement. In G. A. D. Liem & A. B. I. Bernardo (Eds.), *Advancing cross-cultural perspectives on educational psychology: A Festschrift for Dennis M. McInerney* (pp. 273-294). Charlotte, NC: Information Age Publishing.
- Martin, A., Ginns, P., Papworth, B., & Ghasemi-Nejad, M. (2013). Aboriginal/Indigenous students in high school: Understanding their motivation, engagement, academic buoyancy, and achievement. In G. A. D. Liem & A. B. I. Bernardo (Eds.), *Advancing cross-cultural perspectives on educational psychology: A Festschrift for Dennis M. McInerney* (pp. 273-294). Charlotte, NC: Information Age Publishing.
- McCluskey, N. (2003). *Best bets: Education curricula that work*. The Center for Education Reform. Retrieved from <http://www.edreform.com/pubs/bestbets.pdf>
- Moats, L.C. (1994). The missing foundation in teacher education: Knowledge of the structure of spoken and written language. *Annals of Dyslexia*, 44, 81-102.
- Nation, K., & Hulme, C. (1997). Phonemic segmentation, not onset-rime segmentation, predicts early reading and spelling skills. *Reading Research Quarterly*, 32(2), 154-167.

- National Early Literacy Panel. (2009). *Developing Early Literacy: Report of the National Early Literacy Panel, Executive Summary*. Washington, DC: National Institute for Literacy. Retrieved from <http://www.nifl.gov/nifl/publications/pdf/NELPReport09.pdf>
- National Reading Panel (2000). *Teaching children to read*. Retrieved from <http://www.nationalreadingpanel.org>.
- NIFDI (2012). *The history of DI research*. Retrieved from www.nifdi.org/79-research/386-di-research-history
- Office of Management and Budget. (2007). *Program assessment: Reading First State Grants*. Retrieved from <http://www.whitehouse.gov/omb/expectmore/summary/10003321.2006.html>
- Office of the Victorian Auditor General. (2003). *Improving literacy standards in government schools*. Retrieved from http://www.audit.vic.gov.au/reports_par/Literacy_Report.pdf
- Office of the Victorian Auditor-General. (2009). *Literacy and numeracy achievement*. Retrieved from http://www.audit.vic.gov.au/reports_publications/reports_by_year/2009/20090204_literacy_numeracy/1_executive_summary.aspx
- Pearson, P.D. (2010). Reading First: Hard to live with—or without. *Journal of Literacy Research*, 42(1), 100-108.
- Primary National Strategy. (2006). *Primary framework for literacy and mathematics*. UK: Department of Education and Skills. Retrieved from <http://www.standards.dfes.gov.uk/primaryframeworks/>
- Purdie, N., & Ellis, L. (2005). *A review of the empirical evidence identifying effective interventions and teaching practices for students with learning difficulties in Years 4, 5 and 6*. A report prepared for the Australian Government Department of Education, Science and Training. Camberwell, VIC: Australian Council for Educational Research.
- Reynolds, M., & Wheldall, K. (2007). Reading Recovery 20 years down the track: Looking forward, looking back. *International Journal of Disability, Development and Education*, 54(2), 199 – 223.
- Sackett, D., McRosenberg, W., Muir Gray, J. A., Haynes, R. B, Richardson, W. S. (1996). Evidence-Based Medicine: What it is and what it isn't. *British Medical Journal*, 312, 71-2. Retrieved from <http://cebm.jr2.ox.ac.uk/ebmisint.html#coredef>.
- Sammons, P., Hall, J., Sylva, K., Melhuish, E., Siraj, I., Taggart, B., & B. (2013). Protecting the development of 5–11-year-olds from the impacts of early disadvantage: The role of primary school academic effectiveness. *School Effectiveness and School Improvement: An International Journal of Research, Policy and Practice*, 24(2), 251-268.
- Schacter J. (1999). *Reading programs that work: A review of programs for pre-kindergarten to 4th grade*. Retrieved from http://www.mff.org/edtech/publication.taf?_function=detail&Content_uid1=279.
- Shaughnessy, M.F. (2007). An interview with G. Reid Lyon: About Reading First. *EducationNews.Org*. Retrieved from <http://www.ednews.org/articles/13053/1/An-Interview-with-G-Reid-Lyon-About-Reading-First/Page1.html>
- Simmons, D.C., Gunn, B., Smith, S.B., & Kameenui, E.J. (1995). Phonological awareness: Application of instructional design. *LD Forum*, 19(2), 7-10.

- Singh, N.N., Deitz, D.E.D., & Singh, J. (1992). Behavioural approaches. In Nirbay N. Singh, & Ivan L. Beale (Eds.) *Learning disabilities: Nature, theory, and treatment*. New York: Springer-Verlag.
- Slavin, R. E. (2003). A reader's guide to scientifically based research. *Educational Leadership*, 60(5), 12-16. Retrieved from http://www.ascd.org/publications/ed_lead/200302/slavin.html
- Slavin, R. E. (2004). Education research can and must address "What Works" questions. *Educational Researcher*, 33(1), 27-28.
- Slavin, R.E. (2007). Statement of Robert E. Slavin, Director Center for Data-Driven Reform in Education. Committee on Appropriations Subcommittee on Labor, Health and Human Services, Education, and Related Activities. Hearings on Implementation of No Child Left Behind. March 14, 2007. Retrieved from <http://www.ednews.org/articles/8996/1/Statement-of-Robert-E-Slavin-Director-Center-for-Data-Driven-Reform-in-Education/Page1.html>
- Snow, C. E., Burns, S., & Griffin, P. (Eds). *Preventing reading difficulties in young children. Report of the National Research Council*. Retrieved from <http://www.nap.edu/readingroom/books/reading/>
- Spector, J. (1995). Phonemic awareness training: Application of principles of direct instruction. *Reading and Writing Quarterly*, 11, 37-51.
- Stone, J. E. (April 23, 1996). Developmentalism: An obscure but pervasive restriction on educational improvement. *Education Policy Analysis Archives*. Retrieved from <http://seamonkey.ed.asu.edu/epaa>
- Stanovich, K. E. (1994). Constructivism in reading education. *The Journal of Special Education*, 28, 259-274.
- Texas, Office of the Governor. (1996). The Texas Reading Initiative: Mobilizing Resources for Literacy. Retrieved from http://www.governor.state.tx.us/_private/old/Reading/overview.html
- Tunmer, W.E., & Hoover, W.A. (1993). Phonological recoding skill and beginning reading. *Reading & Writing: An Interdisciplinary Journal*, 5, 161-179.
- Weir, R. (1990). Philosophy, cultural beliefs and literacy. *Interchange*, 21(4), 24-33.
- White, W. A. T. (1988). A meta-analysis of the effects of direct instruction in special education. *Education & Treatment of Children*, 11, 364-374.
- Wilson, B. (2014). Review of Indigenous Education in the Northern Territory. Retrieved from http://www.education.nt.gov.au/_data/assets/pdf_file/0016/36205/Indigenous-Education-Review_DRAFT.pdf
- Wilson, B. (2014). Review of Indigenous Education in the Northern Territory. Retrieved from http://www.education.nt.gov.au/_data/assets/pdf_file/0016/36205/Indigenous-Education-Review_DRAFT.pdf