

Evidence based Literacy Interventions (Wave 2 and 3)

Know thy impact - What educators do matters

Instructional Strategy	Effect Size ¹	Growth ²
Repeated Reading Programs ³	0.60	
Explicit teaching practices (Direct Instruction)	0.60	
Reading – 2 nd & 3 rd chance programs ⁴	0.46	
Writing Programs	0.44	
One to One Tuition		+5m
Small group tuition		+4m

Recommendation ⁵	Level of Evidence
All students	
Screen all students for potential reading problems at the beginning of the year and again in the middle of the year, regularly monitor the progress of students at risk for developing reading disabilities.	Moderate
Wave 2 intervention	
Provide intensive, systematic instruction on up to three foundational reading skills in small groups to students who score below the benchmark on universal screening. Typically these groups meet between 3-5 times a week, for 20-40 minutes.	Strong ⁶
Monitor the progress of Wave 2 students at least once a month. Use these data to determine whether students still require intervention. For those students still making insufficient progress, Student Support team should design a Wave 3 intervention plan.	Low

¹ Hattie J 2009 Visible Learning; 2012; 2015

² Teaching and Learning Toolkit Australia <http://evidenceforlearning.org.au/the-toolkit/>

³ Consists of re-reading a short and meaningful passage until a satisfactory level of fluency is reached. (Hattie 2009 p135)

⁴ Well-designed, reliably implemented, 1-1 intervention for students with poor reading skills Hattie 2009 p 140

⁵ https://ies.ed.gov/ncee/wwc/pdf/practice_guides/rti_reading_pg_021809.pdf

⁶ Also supported in MUSEC Briefing Explicit instruction for Student with Special learning Needs Issue 18 May 2009 and MUSEC Briefing Choosing Effective Programs for Low Progress Readers Issue 21 April 2009

Further information: Evidence-based Strategies

Repeated Reading Programs (0.60 Effect Size)

The research literature provides some clear directions on what to do with struggling readers: Interventions must combine the modelling, repeated reading, and feedback that research has demonstrated effective⁷.

Automaticity “usually develops naturally between second and third grade, but for learning-disabled students it is a separate set of skills that need to be taught”. The skills in automaticity in word-recognition and decoding (the move from accurate to automatic word reading) need to be specifically assessed and taught, especially to learning disabled students⁸. The effects of repeated reading has a marked positive effects on reading comprehension as well as reading fluency. However, according to What Works Clearing House⁹ Repeated Reading was found to have positive effects on reading comprehension and no discernible effects on alphabetics, reading fluency, and general reading achievement for students with learning disabilities. The WWC considers the extent of evidence for *repeated reading* on students with learning disabilities to be small for four outcome domains—reading comprehension, alphabetics, reading fluency, and general reading achievement.

Therefore, explicit teaching of Repeated Reading as a strategy for correcting accuracy, expression, phrasing and fluency is somewhat associated with improved reading accuracy and comprehension. Repeated reading consists of re-reading a short and meaningful passage until a satisfactory level of fluency is reached. *Repeated reading* can be used with students who have developed initial word reading skills but demonstrate inadequate reading fluency for their grade level. During *repeated reading*, a student sits in a quiet location with a teacher and reads a passage aloud at least three times. Typically, the teacher selects a passage of about 50 to 200 words in length. If the student misreads a word or hesitates for longer than 5 seconds, the teacher reads the word aloud, and the student repeats the word correctly. If the student requests help with a word, the teacher reads the word aloud or provides the definition. The student rereads the passage until he or she achieves a satisfactory fluency level¹⁰.

Evidence for Explicit Instruction for Wave 2 and 3 learners

MUSEC¹¹ recommends that there is clear and convincing evidence for explicit teaching approaches to instruction for students with special needs. Explicit instruction involves making clear to students what they are to learn and how they will demonstrate their learning, direct teaching of basic skills or strategies in small steps, clear presentation of new concepts, guided and independent practice, active engagement of students, constant monitoring of student performance and intensive feedback. It focuses on the role of the teacher in providing explicit guidance to students and the use of observable changes in student performance to keep track of student learning.

Reading 2nd & 3rd chance Programs (eg: Reading Recovery) (0.46 Effect Size)

These are well-designed, reliably implemented, 1-1 interventions for students with poor reading skills and can make a significant contribution to improved reading outcomes for many students whose poor reading skills place them at risk of academic failure.¹² *Reading Recovery*[®] is a short-term intervention that provides one-on-one tutoring to first-grade students

⁷ <http://www.readingrockets.org/article/developing-fluent-readers>

⁸ Hattie 2009 p 135)

⁹ <http://ies.ed.gov/ncee/wwc/interventionreport.aspx?sid=576>

¹⁰ <http://ies.ed.gov/ncee/wwc/interventionreport.aspx?sid=576>

¹¹ http://www.mq.edu.au/_data/assets/pdf_file/0012/171111/musec_briefing_18_explicit_instruction-1.pdf

¹² Hattie 2009 Visible Learning London & New York Routledge p 140

who are struggling in reading and writing. The supplementary program aims to promote literacy skills and foster the development of reading and writing strategies by tailoring individualized lessons to each student. Tutoring is delivered by trained *Reading Recovery*[®] teachers in daily 30 minute pull-out sessions over the course of 12–20 weeks¹³.

The success of Reading Recovery as an early intervention in literacy has been carefully documented since its inception and, according to NSW Government Education & Training,¹⁴ “...it has proven to be extraordinarily successful. *Reading Recovery has the strongest evidence-base of any intervention program.*” Allington (2002, 2005), Schmitt et al (2005) and Strickland (2002) report that there is more research evidence supporting Reading Recovery as a means of accelerating the development of early reading than any other instruction intervention.” What Works Clearing House¹⁵ found that Reading Recovery has positive effects on general reading achievement and potentially positive effects on alphabets, reading fluency, and comprehension for beginning readers. In conclusion, the WWC considers the extent of evidence for Reading Recovery[®] on the reading skills of beginning readers to be small for four outcome domains—alphabets, reading fluency, comprehension, and general reading achievement.

According to MUSEC (2005)¹⁶ Reading Recovery appears to be mildly effective but possibly not as effective as it should be given its high cost and limited utility. Alternative interventions for at-risk Year 1 readers have been suggested and trialed using more explicit teaching of phonemic awareness and phonic decoding and in small groups of about three children instead of one-to-one instruction.

Writing Programs (0.44 Effect Size)

It is powerful to teach strategies for planning, revising and editing writing, particularly if students are struggling writers.¹⁷ This includes strategies for summarising reading material, working together to plan, revise and edit, setting clear and specific goals for what students are to accomplish for their writing product, using word processing and teaching students strategies to write increasingly complex sentences.. The results show the power of teaching students the processes and strategies involved in writing, structuring the teaching of writing by having students work together in an organised fashion, and of setting clear and specific goals, especially as the purpose of each piece of writing.

The quality of instruction students receive has a major impact on writing achievement¹⁸. Students who struggle with writing require intense, explicit instruction. There are 3 elements to the instruction for these learners:

1. Adhering to basic framework of planning, writing, revision
2. Explicitly teaching critical steps in the writing process
3. Providing feedback guided by the information explicitly taught

Small group tuition (+ 4 months)

According to the Teaching and Learning Toolkit¹⁹, Small group tuition is defined as one teacher or professional educator working with two, three, four, or five students providing intensive support to support lower attaining learners. The smaller the group the better, e.g. groups of two have slightly higher impact than groups of three, but slightly lower impact compared to one to one tuition. Once group size increases above six or seven there is a noticeable reduction in effectiveness. However, although the above pattern is usually consistent,

¹³ <http://ies.ed.gov/ncee/wwc/interventionreport.aspx?sid=420>

¹⁴ http://www.curriculumsupport.education.nsw.gov.au/earlyyears/reading_recovery/research.htm

¹⁵ <http://ies.ed.gov/ncee/wwc/interventionreport.aspx?sid=420>

¹⁶ file:///D:/Steve/Downloads/musec_briefing_3_reading_recovery.pdf

¹⁷ Hattie 2009 p 142

¹⁸ Wendling et al p 149

¹⁹ <http://evidenceforlearning.org.au/toolkit/small-group-tuition/>

there is some variability in impact within the existing evidence.

For example, in reading, small group teaching can sometimes be more effective than either one to one or paired tuition. It may be that in these cases reading practice can be efficiently organised so that all the group stay fully engaged as each take their turn, such as in Guided Reading. The variability in findings suggests two things. First, the quality of the teaching in small groups may be as or more important than the group size, and there is evidence of the benefits of professional development on student outcomes. Second, it is important to evaluate the effectiveness of different arrangements as the specific subject matter being taught and composition of the groups may influence outcomes. Small group tuition is most likely to be effective if it is targeted at students' specific needs. The conclusion is that overall there is moderate impact of small group tuition for moderate cost based on limited evidence.

One-to-One tuition (+ 5 months)

One to one tuition is where a teacher, teaching aide or other adult gives a student intensive individual support. Evidence indicates that one to one tuition can be effective, on average accelerating learning by approximately five additional months' progress. Short, regular sessions (about 30 minutes, 3-5 times a week) over a set period of time (6-12 weeks) appear to result in optimum impact. Evidence also suggests tuition should be additional to, but explicitly linked with, normal teaching, and that teachers should monitor progress to ensure the tutoring is beneficial.

Further findings, however, suggest that the quality of teaching in one to one tuition or small groups is more important than the group size, emphasising the value of professional development for teachers. Programmes involving teaching aides or volunteers also have a valuable impact, but tend to be less effective than those using experienced and specifically trained teachers, which have nearly twice the effect on average. Where tuition is delivered by volunteers or teaching aides there is evidence that training and the use of a structured program is beneficial. Overall, the evidence is consistent and strong, particularly for younger learners who are behind their peers in primary schools, and for subjects like reading and mathematics. One to one tuition is very effective in helping learners catch up, but is relatively expensive. Before you commit to one to one tuition, have you considered trialling intensive support groups of two or three and evaluating the impact?

Characteristics of quality interventions:²⁰

There are 4 critical **characteristics of quality interventions**:

- **Timely** – early intervention to enable success and build resilience for each learner.
- **Targeted** – evidence based, responsive to needs, differentiated according to needs.
- **Purposeful** – outcome focused – specific goals set for individuals and groups of learners to improve their engagement and achievement in numeracy and literacy.
- **Time-limited** - specified time-frame set to meet specified goals.

According to What Works Clearing House²¹, for students who don't respond to Wave 1 instruction they should receive small group instruction 3-4 times a week, 20-40 minutes per session and focus on critical reading skills such as phonemic awareness, decoding, reading comprehension and fluency. MUSEC take this one step further and say that this intervention should be for 10-20 weeks.²²

Other Information:

²⁰ Allington 2009, Hattie 2003, 2009, Reeves 2006, Schmoker 2007 cited in Numeracy and Literacy Results Plus for Site Leaders Expectation D

²¹ What works clearing house Response to Intervention in Primary Grade Reading www.readingrockets.org/article/response-intervention-primary-grade-reading

²² MUSEC Briefing Response to Intervention Issue 17 March 2009

Use of para-professionals for Wave 2 intervention

According to research²³ Wave 2 supplemental reading interventions can be effective when provided by well-prepared and well-supported paraprofessionals when

- interventionists are well informed (e.g., have an understanding of phonemic awareness)
- group sizes are kept very small to support effective instruction and behavior management
- highly structured reading intervention programs are implemented, and
- an experienced teacher prepares and coaches the paraprofessionals, spending extended amounts of time observing lessons, modeling effective instruction, and problem solving when students fail to make adequate progress.

Cognitive Strategy Instruction (CSI)

CSI is an instructional approach that is critically important to use when teaching students who are struggling to learn.²⁴ It focusses on developing thinking skills in order to improve learning outcomes. Many students with learning difficulties are passive learners, and use of CSI makes them active participants who are responsible for their learning and supports the development of executive functioning, which is often cited as a problem for struggling learners. One model for implementing CSI, is Self-regulating Strategy Development:

1. *Develop and activate background knowledge*

- Determine the pre requisite skills a through task analysis
- Teach students necessary pre-skills or knowledge for the task

2. *Discuss the strategy*

- Explain the importance and how it will help the student
- Describe the steps of the strategy
- Explain where and when to use this strategy

3. *Model the strategy*

- Demonstrate the how and why of the strategy
- Use a think-aloud procedure to show students the meta-cognitive aspects of the task

4. *Memorize the strategy*

- Memorize the steps of the strategy so the focus can be on accomplishing the task.
- Provide ample practice and variation

5. *Support the strategy*

- Use scaffolding to ensure success (gradually shift responsibility to the learner) Use co-operative groups and collaboration
- Provide practice in a variety of settings

6. *Independent performance*

- Allow individual adaptations of the strategy as long as the end result is improved performance
- Monitor performance and strategy use(ongoing)

²³ Response to Intervention for Reading Difficulties in the primary Grades www.ncbi.nlm.nih.gov/pmc/articles/PMC3454349/

²⁴ Wendling B & Mather N 2009 *Essentials of evidence-based academic Interventions* John Wiley & Sons p234

Oral Language

What the research tells us

Studies on oral language interventions consistently show positive benefits on learning, with students making approximately 5 months additional progress over the course of a year²⁵.

Oral language approaches incorporating vocabulary development and listening comprehension can be as effective (or possibly more effective) as a treatment for reading comprehension difficulties as text-based approaches.²⁶

An individual's oral language vocabulary is a good indicator of his/her expected reading vocabulary. Determining whether an individual's reading vocabulary is commensurate with his/her oral vocabulary can help identify the possible reasons for learning difficulties and lead to appropriate instructional planning²⁷.

Phonemic Awareness

The ability to hear and identify individual sounds in spoken words. Phonemes are the smallest discernible unit of sound in speech and phonemic awareness is knowledge of, and capacity to manipulate, individual phonemes in spoken words²⁸.

Phonological Awareness is the ability to recognize that words are made up of a variety of sound units, i.e. words are made up of small sound units (phonemes), words can be segmented into syllables, and syllables begin with a sound (onset) and end with another sound (rime).

What the research tells us

Interventions that incorporate training in phoneme awareness are most effective when the training also includes work on letters and when the intervention is for no more than 20h in duration²⁹.

The two most important phonological awareness abilities for reading and spelling are blending (important for decoding or applying phonics skills to reading unfamiliar words) and segmenting (important to encode- spelling).

An early warning sign for individuals at risk for reading problems is difficulty with rhyming words. Individuals with weakness in phonological awareness typically have trouble with the acquisition, retention and application of phonic skills. They have difficulty learning to read and spell because of weakness in distinguishing, memorising or retrieving the various speech sounds (phonemes) that are associated with the various letters and letter patterns (the graphemes).³⁰

²⁵ <https://educationendowmentfoundation.org.uk/evidence/teaching-learning-toolkit/oral-language-interventions/>

²⁶ National Reading Panel (2000) <http://www.airipa.it/wp-content/uploads/2014/09/SnowlingHulme2010.pdf>

²⁷ Wendling B & Mather N 2009 *Essentials of evidence-based academic Interventions* John Wiley & Sons p 81

²⁸ Hemenstall K March 2016 Read About it: scientific Evidence for Effective Teaching of Reading p 6

²⁹ National Reading Panel (2000) <http://www.airipa.it/wp-content/uploads/2014/09/SnowlingHulme2010.pdf>

³⁰ Wendling B & Mather N 2009 John Wiley & Sons pp20-1

Phonics

*The relationship between letters of written language and the sounds in spoken language. Phonics instruction is the single most effective decoding approach for students.*³¹

What the research tells us

Qualified teachers tend to get better results when delivering phonics interventions (up to twice the effectiveness of other staff) indicating that expertise is a key component of successful teaching of early reading³².

For older readers who are still struggling to develop reading skills, phonics approaches may be less successful than other approaches such as Reading Comprehension strategies and Meta-cognition and self-regulation. The difference may indicate that children aged 10 or above who have not succeeded using phonics approaches previously require a different approach, or that these students have other difficulties related to vocabulary and comprehension which phonics does not target³³.

At risk students require careful, systematic instruction in individual letter-sound correspondences, and developing them requires teachers to explicitly isolate the phoneme from the word (This “mmm” matches this letter: m). At risk students also need ample practice of these sounds in isolation from stories if they are to build a memory for the letter-sound relationship.³⁴

Older students do not find it easy to alter the inefficient strategies that have been entrenched over time. Even at risk students in Year 1 may require extensive support, estimated at 2.5 hours per day for 2 years - of quality, direct phonics instruction (whole class and small group programs).

Students struggling with acquiring sound-symbol relationships often do so because of limited phonemic awareness. In addition, students often have difficulty strong and retrieving accurate representations of phoneme-grapheme relationships and words, implicating weakness in associative memory, working memory and processing of meaning and context (orthographic processing³⁵).

³¹ Hempenstall K March 2016 Read About it: scientific Evidence for Effective Teaching of Reading p11

³² Phonics Australian Teaching and Learning Toolkit <http://australia.teachingandlearningtoolkit.net.au/toolkit/oral-language-interventions/>

³³ Phonics Australian Teaching and Learning Toolkit <http://australia.teachingandlearningtoolkit.net.au/toolkit/oral-language-interventions/>

³⁴ <http://www.nifdi.org/resources/news/hempenstall-blog/hempenstalls-referenced-documents/301-issues-in-phonics-instruction/file>

³⁵ Wendling B & Mather N 2009 John Wiley & Sons p36

Fluency

The capacity to read text accurately, quickly and expressively.

What the research tells us

The purpose of fluency instruction is to increase ease and automaticity with reading so that the reader can devote all of his/her attention to understanding the material. Fluency is a means – just like decoding – to a higher end than itself. Students who benefit from methods of increasing reading fluency have acquired some proficiency in decoding skill, but their reading is lower than their oral language abilities. Therefore, students should first become accurate readers before an emphasis is placed on speed of reading.

Wendling and Mather³⁶ indicate that most of the effective procedures for building fluency involve:

- repeated exposure to words with material at the child's instructional reading level
- opportunities for partner reading
- practicing difficult words prior to reading the text
- timings for accuracy and rate
- opportunities to hear books read
- opportunities to read to others.

³⁶ Wendling B & Mather N 2009 John Wiley & Sons p59

Vocabulary

All the words children need to know to comprehend and communicate. Oral vocabulary is the words children recognise or use in listening and speaking. Reading vocabulary is the words children recognise or use in reading and writing.

What the research tells us

Early signs of children with vocabulary deficits include difficulty comprehending oral language and trouble remembering and retrieving words. They may also have difficulty repeating sentences or learning new words. All academic learning will, be impacted on for these children, with problems most apparent in reading, comprehension and written expression, as well as the language of Maths.

The overall goal of a vocabulary program is to expand both receptive and expressive vocabularies.³⁷

- Vocabulary should be taught directly and indirectly
- Words must be seen multiple times in multiple contexts
- Language-rich environments foster incidental learning of vocabulary
- Technology assists development of vocabulary
- No single method works best all of the time for teaching vocabulary but should include:
 - Reading aloud to a child
 - Text talk (teacher reading aloud to child then engaging in active talking through questioning, follow up, word explanations, use of background knowledge)
 - Audio books
 - Promoting word-consciousness and interest in words
 - Intentional explicit word instruction
 - Teaching synonyms, antonyms, multiple-meaning words
 - Finding similarities, differences, comparisons, connections among target words (semantic feature analysis)
 - Use of semantic maps, word webs or other graphic organisers
 - Pre-teaching key vocabulary words and concepts prior to reading
 - Using a keyword method (associating new words with visual images to help students recall word meanings and learn new words)

Less advanced students respond better to a more explicit approach of teaching vocabulary, where they are taught word meaning directly, using everyday language rather than dictionary definitions.

³⁷ Wendling B & Mather N 2009 *Essentials of evidence-based academic Interventions* John Wiley & Sons Ch 5

Comprehension

The ability to extract and construct meaning from written text using knowledge of words, concepts and ideas

What the research tells us

Explicit instruction, modelling, guided practice, feedback to support student learning and opportunities for practice:

- encourage students to think aloud when reading passages in order to access the strategies they are using
- direct student to attend to important, highly connected parts of the text they are reading and provide explicit feedback that is responsive to individual students' ways of processing text
- involve the reader in actively interrogating the text.

Comparative findings indicate that, on average, reading comprehension approaches appear to be more effective than phonics or oral language approaches for upper primary and secondary students, both in terms of short-term and long-term impact. However, supporting struggling readers is likely to require a concerted effort across the curriculum and a combination of different approaches.

It is important to remember that no particular strategy should be seen as a panacea, and careful diagnosis of the reasons why an individual student is struggling is essential when exploring possible intervention strategies³⁸.

Eight most effective methods for improving text comprehension are:

- comprehension monitoring
- co-operative learning
- graphic/semantic organizers for learning new vocabulary
- story structure training
- question answering
- question generation
- summarization, and
- multiple strategy teaching.³⁹

³⁸ Reading Comprehension Strategies Australian Teaching and Learning Toolkit <http://australia.teachingandlearningtoolkit.net.au/toolkit/oral-language-interventions/>

³⁹ (National Reading Panel, 2000) cited in <http://www.airipa.it/wp-content/uploads/2014/09/SnowlingHulme2010.pdf>

Diagnosing Reading Comprehension difficulties

There are numerous potential disruptors to skilful comprehension especially accurate and fluent decoding and vocabulary. Others include syntax, working memory, making inferences, monitoring comprehension, domain knowledge, text structure as well as an ability to sustain attention⁴⁰.

Do not assume that reading comprehension difficulties can be addressed by teaching reading comprehension strategies. Problems in domains such as fluent decoding and vocabulary should first be checked and attention directed to these lower order processes first, before focussing on reading comprehension strategies. In most cases the comprehension issue will recede as other processes advance.

To promote reading comprehension, approaches which work directly on text comprehension strategies and on oral language skills are effective, with vocabulary instruction being a particularly important technique.⁴¹

When diagnosing reading comprehension difficulties consider the students ability in:

Accurate and fluent decoding - Misreading words which alters the meaning of the text making comprehension less likely; Error prone reading through inaccurate de-coding and lack of fluency) is a very demanding process for the brain, which means that readers lose track of what they have already read and are unable to follow the text's sequence of ideas; low working memory capacity impacts on the student's ability to maintain information as they read. Improving decoding fluency is important for these students (eg by developing oral comprehension through use on audio books, presenting visual representation of a narrative text to teach comprehension strategies and processes).

Prosody – When words are read with pauses unrelated to the natural flow of speech, comprehension is seriously compromised. Those students struggling with comprehension may insert inappropriate pauses in a sentence from decoding errors.

A checklist developed by Hudson, Lane and Pullen⁴² provides a detailed assessment of a student's prosody:

1. Student placed vocal emphasis on appropriate words.
2. Student's voice tone rose and fell at appropriate points in the text.
3. Student's inflection reflected the punctuation in the text (e.g., voice tone rose near the end of a question).
4. In narrative text with dialogue, student used appropriate vocal tone to represent characters' mental states, such as excitement, sadness, fear, or confidence.
5. Student used punctuation to pause appropriately at phrase boundaries.
6. Student used prepositional phrases to pause appropriately at phrase boundaries.
7. Student used subject-verb divisions to pause appropriately at phrase boundaries.
8. Student used conjunctions to pause appropriately at phrase boundaries.

⁴⁰ Wagner et al 2010 cited in hempenstall p25

⁴¹ <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3429860/>

⁴² Lane and Pullen 2005 p cited in <http://www.readingrockets.org/article/understanding-and-assessing-fluency>

Vocabulary – once decoding is established, deficits in knowledge of words and languages becomes ore salient in comprehension. Nine out of ten Year 2 students whose decoding was fluent, but whose reading comprehension was inadequate, had a low vocabulary level. ⁴³ The number of words children understand in speech exceeds the number of written words they recognise, and hence vocabulary-related comprehension issues may nit become evident until the middle primary years. Students with under-developed vocabulary in Year 3 had reading comprehension problems evident by Year 4 & 5⁴⁴. Early intervention can change this trajectory.

Domain knowledge – this is crucial to reading comprehension. A wide vocabulary and a high level of background knowledge add more to reading comprehension over time than do comprehensions strategies⁴⁵.

Reading Comprehension Strategies

For many students, directly teaching comprehension strategies is necessary, and for students older than 10 years of age, reading comprehension becomes the most concerning focus, especially as text difficulty increases. Some of these strategies include:

Reciprocal teaching	teacher and students take turns at acting as teacher, modelling the strategies after reading a portion of text
Summarising	student s write a brief written summary of a passage that has just been read summarising the main thrust of the passage- techniques for this is explicitly taught
Sentence combination	have students practice combining 2 or more sentences
Questioning	involves students in formulating their own question about the text that can be answered from within it – can be literal, inferential and evaluative
Clarifying	encouraging students to pause when they recognise a failure of comprehension
Predicting	By asking “What do I think will occur in this passage?” student are orienting themselves to the task, and then can draw on relevant background knowledge of the topic
Mapping	involves visualisation and graphic organisers to aid comprehension and recall of text meaning
Inference making	explicitly teach how to use background knowledge to enable inferences to improve reading comprehension

⁴³ Wager et al 2010 cited in hempenstall p26

⁴⁴ Chall et al 2003 cited in Henpenstall p 26

⁴⁵ Willingham et al 2006 cited in Hempenstall p 26

Further Information: Wave 3

Wave 3 intervention	
Recommendation	Level of evidence
Provide intensive instruction on a daily basis that promotes the development of the various components of reading proficiency to students who show minimal progress after reasonable time in Wave 2 small group instruction	Low

Students who are unresponsive after Wave 1 and 2 interventions are given a Wave 3 intervention which may involve 1:1 with a special educator.⁴⁶ Gersten⁴⁷ recommends that Wave 3 reading intervention consist of individualized, “concentrated instruction” delivered in “multiple and extended instructional sessions daily.” The number of weeks—or months—spent in Tier 3 will depend on the needs of the students and the level of intensity with which intervention is delivered.

As a group, students demonstrate inadequate progress in Wave 2 interventions have been found to have relatively severe deficits in phonological processing, processing speed, and verbal working memory, and they commonly have challenging behaviors and/or attention deficits. Providing effective, individualized intervention to these most difficult-to-remediate students places large demands on teachers’ knowledge and skills and requires the capacity to make quick instructional decisions to respond appropriately to struggling learners. Given the challenges faced by students in Wave 3, it may be best to provide their interventions in a quiet location outside of the regular classroom⁴⁸.

Schools should intensify instruction by focussing on fewer skills and providing extended daily session. Teachers should incorporate strategies such as modelling, scaffolding, think alouds and graphic organisers and provide student with immediate feedback. Teachers need to build skills gradually and provide frequent practice opportunities to ensure students have mastered a reading skill before moving on.⁴⁹

Evidence Based Programs Wave 2 and 3

(Please note that all recommendations are taken from ACER Literacy and Numeracy Interventions in the Early Years of Schooling unless otherwise footnoted)

When considering the needs of low progress students there is a strong requirement for instructional efficiency. When students have fallen behind their rate of learning is below average. If they are to catch up it can only be because they are now learning faster than the average, because the other students continue to progress while an intervention is implemented with those left behind. To achieve accelerated learning requires exemplary programs that teach more in less time. That is they are efficient in design and implementation.

For struggling readers, small group settings and individual tuition is more effective than larger groups and short, intensive bursts of intervention, with daily, targeted support, appear to be more effective than longer term interventions.⁵⁰ For low progress readers, there is substantial empirical support for the efficacy of explicit, systematic, intensive instruction in basic skills such as phonemic awareness and phonics. Learners taught by these methods can make major gains in reading and begin to catch up with their peers. Teachers of low-progress readers should employ programs of reading instruction that include explicit and systematic instruction in the five key areas outlined above, and these should be taught intensively. When selecting a reading program, specific evidence of its efficacy is also highly desirable⁵¹.

⁴⁶ MUSEC Briefing Response to Intervention Issue 17 March 2009

⁴⁷ Response to Intervention for Reading Difficulties in the primary Grades www.ncbi.nlm.nih.gov/pmc/articles/PMC3454349

⁴⁸ Response to Intervention for Reading Difficulties in the primary Grades www.ncbi.nlm.nih.gov/pmc/articles/PMC3454349

⁴⁹ What works clearing house Response to Intervention in Primary Grade Reading www.readingrockets.org/article/response-intervention-primary-grade-reading

⁵⁰ http://www.education.ie/en/Education-Staff/Information/NEPS-Literacy-Resource/neps_literacy_good_practice_guide.pdf

⁵¹ https://www.mq.edu.au/_data/assets/pdf_file/0018/171108/musec_briefing_21_choosing_effective_programs_for_low-progress_readers.pdf

Australian Origin		Wave 2 and 3			
Program	Origin	Target group	Year level	Intervention focus	Evidence
Alpha to Omega ⁵²	Aust	Use as a comprehensive remedial approach	EY-adult	A structured phonics-based course with detailed lesson plans to help with teaching of reading, writing and spelling to children with learning difficulties, including dyslexia. Is the basis for the WordShark computer program, and both can be used as a part of a comprehensive remedial approach.	No direct independent research found
Levelled Literacy Intervention System	Aust	For students who find reading and writing difficult. Can also be used as Wave 1 instruction as a part of The Daily 5	F-12	Is an intensive, small-group, supplementary literacy intervention. The goal of LLI is to lift the literacy achievement of students who are not achieving grade-level expectations in reading.	Some evidence of effectiveness⁵³
Literacy Lessons	NZ	Lowest achieving students in Year 1	1-4	Daily 1-1 instruction for students identified as experiencing difficulties in literacy learning. Is an extension of Reading Recovery and not a separate intervention.	No evaluative evidence available
MINILIT	NSW	Bottom 25% struggling Year 1 readers. Also appropriate for at risk Preschool learners & struggling Year 2 students	1	Teaching the basics of letter/sound knowledge and decoding skills for CVC words, extending word attack knowledge by teaching commonly used digraphs and longer words.	Evidence indicates positive and significant gains
MULTILIT	NSW	Low achieving students	2-10	PD program for teachers which leads to instruction for low progress readers involving intensive, systematic and explicit instruction in 3 main areas: synthetic phonics (or word attack skills), sight word recognition and reinforced reading (supported book reading)	Use with caution; evidence of effectiveness is sound especially in decoding & confidence in reading⁵⁴
PRE-LIT	NSW	Preschool or children who come to school without the necessary prerequisite emergent literacy skills in place	K-R	A systematic, skills-based, hierarchical sequenced and prescribed lessons designed to complement a play-based learning environment focusing on Phonological Awareness and oral language development through Structured Book Reading	No direct independent research found
Project X Code	Aust	‘Struggling readers’	4-6	Reading intervention program focusing on synthetic phonics and comprehension.	No independent research found
Rainbow reading	NZ	For students with reading fluency difficulties	3-5	Levelled reading program to build fluency, accuracy and comprehension incorporating explicit instructions with audio support in fiction and non fiction texts.	No direct independent research found

⁵² Found via: https://www.decd.sa.gov.au/sites/g/files/net691/f/examples_of_high_quality_evidence-based_phonics_programs.pdf

⁵³ The Center for Research and Educational Policy (CREP) at University of Memphis conducted two independent evaluations of LLI. In the first study, pre-LLI tests showed only 5% of the students reading at grade level on the Gates-MacGinitie Reading test, while post-LLI tests showed 34% of students reading at grade level (Harrison, Grehan, Ross, & Inan, 2007). In the second study, a randomized control-group study, LLI students in grades K-2 gained more in reading, as measured by the Benchmark Assessment and/or DIBELS, than students in the control group (Ransford-Kaldon, 2010). Cited in www.literacycollaborative.org/docs/

⁵⁴ Research evidence indicates overall the schools implementing MULTILIT achieved gains in NAPLAN, but this is not conclusive. Not all schools in the research implemented the program with prescriptive methodology as recommended which is a limitation of the research evidence. No cost effectiveness studies were identified. Further scope for monitoring of aspects and design of the intervention. ACER p52

Program	Origin	Target group	Year level	Intervention focus	Evidence
Reading Freedom ⁵⁵	NSW	For students with reading difficulties	3-8	A systematic phonics based approach to the teaching of reading and spelling which aims to equip students with effective literacy skills.	No direct independent research found
SPELD SA Free Intensive Literacy Program	SA	Student with literacy difficulties	R-3	Includes the phonics, grammar and punctuation skills included in a standard R-3 syllabus, with texts selected for older students, aged 8 to adult. Can be used on a one-to-one basis or with a group for Wave 2 and 3 intervention.	No independent research available

Overseas origin Wave 2 and 3					
Program	Origin	Target group	Yr level	Intervention focus	Evidence
Read Write Inc Fresh Start ⁵⁶	UK	Phonics intervention for struggling readers and writers	5-7	A synthetic phonics catch-up program targeting phonics knowledge and incorporating applied reading activities, comprehension questions, grammar and writing activities	No direct independent research found
Reading Recovery	NZ	Lowest achieving students in Year 1	1	Diagnosis of individual students' reading needs, 1-1 instruction with trained Reading Recovery teachers in a daily 30 minutes lesson over 12-20 weeks. Emphasis on the orchestration of skills within reading rather than the development of separate skills.	High evidence of effectiveness, particularly over the long term; Mildly effective⁵⁷
RTI Phonological Awareness Interventions ⁵⁸	US	Students with weak phonics skills which is interfering with their ability to read fluently which then negatively impacts their ability to comprehend written text	EY	Supplemental program to strengthen skills through intensive exposure to basic phonological concepts	No direct independent research found
Teaching literacy to Learners with Dyslexia ⁵⁹	UK	Learners with literacy difficulties	R-12	A structured multi-sensory teaching program for teaching literacy to children with dyslexia and other specific literacy difficulties.	No direct independent research found
The Gillingham Manual ⁶⁰	US	Students with difficulties in reading and spelling	5-adult	Multi-sensory, remedial phonics approach to teaching reading and spelling for individuals or small groups.	No independent research found
The Gillon Phonological Awareness Training Program ⁶¹	NZ	An intervention program for children at risk for reading disorder	R-2	Targets skills of phonological awareness and links speech to print; program designed for 2 one-hour individual sessions per week for total of 20 hours but service delivery could be adapted	No direct independent research found

⁵⁵ Found via: https://www.decd.sa.gov.au/sites/g/files/net691f/examples_of_high_quality_evidence-based_phonics_programs.pdf

⁵⁶ Found via: https://www.decd.sa.gov.au/sites/g/files/net691f/examples_of_high_quality_evidence-based_phonics_programs.pdf

⁵⁷ MUSEC Briefing Issue 3 September 2005

⁵⁸ http://swprsc.fatcow.com/handouts/wp-content/uploads/2009/05/Phonological_Book_Revised.pdf

⁵⁹ Found via: https://www.decd.sa.gov.au/sites/g/files/net691f/examples_of_high_quality_evidence-based_phonics_programs.pdf

⁶⁰ Found via: https://www.decd.sa.gov.au/sites/g/files/net691f/examples_of_high_quality_evidence-based_phonics_programs.pdf

⁶¹ http://www.education.canterbury.ac.nz/people/gillon/gillon_phonological_awareness_training_programme.shtm

References

ACER 2015 *Literacy and Numeracy Interventions in the Early Years of Schooling* <http://research.acer.edu.au>

Allington 2009, Hattie 2003, 2009, Reeves 2006, Schmoker 2007 cited in Numeracy and Literacy Results Plus for Site Leaders Expectation D

Australian Teaching and Learning Toolkit *Phonics* <http://australia.teachingandlearningtoolkit.net.au/toolkit/oral-language-interventions/>

Australian Teaching and Learning Toolkit *Reading Comprehension Strategies* <http://australia.teachingandlearningtoolkit.net.au/toolkit/oral-language-interventions/>

Australian Teaching and Learning Toolkit <http://evidenceforlearning.org.au/the-toolkit/>

Gillon G 2007 The Gillon Phonological Awareness Training Programme <http://www.education.canterbury.ac.nz/people/gillon/resources.shtml>

Hattie 2009 *Visible Learning* London & New York Routledge

Hempenstall K March 2016 *Read About it: scientific Evidence for Effective Teaching of Reading* <https://www.cis.org.au/publications/research-reports/read-about-it-scientific-evidence-for-effective-teaching-of-reading>

http://www.curriculumsupport.education.nsw.gov.au/earlyyears/reading_recovery/research.htm

<http://evidenceforlearning.org.au/toolkit/small-group-tuition/>

<https://educationendowmentfoundation.org.uk/evidence/teaching-learning-toolkit/oral-language-interventions/>

https://ies.ed.gov/ncee/wwc/pdf/practice_guides/rti_reading_pg_021809.pdf

<http://ies.ed.gov/ncee/wwc/interventionreport.aspx?sid=576>

https://www.decd.sa.gov.au/sites/g/files/net691/f/examples_of_high_quality_evidence-based_phonics_programs.pdf

http://www.education.ie/en/Education-Staff/Information/NEPS-Literacy-Resource/neps_literacy_good_practice_guide.pdf

<http://www.nifdi.org/resources/news/hempenstall-blog/hempenstalls-referenced-documents/301-issues-in-phonics-instruction/file>

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3429860/>

<http://www.readingrockets.org/article/understanding-and-assessing-fluency>

<http://www.readingrockets.org/article/developing-fluent-readers>

http://swprsc.fatcow.com/handouts/wp-content/uploads/2009/05/Phonological_Book_Revised.pdf

MUSEC Briefing *Reading Recovery for Young Struggling Readers* Issue 3 September 2005

MUSEC Briefing *Explicit instruction for Student with Special Learning Needs* Issue 18 May 2009

http://www.mq.edu.au/data/assets/pdf_file/0012/171111/musec_briefing_18_explicit_instruction-1.pdf

MUSEC Briefing *Choosing Effective Programs for Low Progress Readers* Issue 21 April 2009

https://www.mq.edu.au/data/assets/pdf_file/0018/171108/musec_briefing_21_choosing_effective_programs_for_low-progress_readers.pdf

MUSEC *Briefing Response to Intervention* Issue 17 March 2009

National Reading Panel (2000) <http://www.airipa.it/wp-content/uploads/2014/09/SnowlingHulme2010.pdf>

Response to Intervention for Reading Difficulties in the Primary Grades www.ncbi.nlm.nih.gov/pmc/articles/PMC3454349

Snowling M and Hulme C 2011 *Evidence-based interventions for reading and language difficulties: Creating a virtuous circle* New York University of New York

<http://www.airipa.it/wp-content/uploads/2014/09/SnowlingHulme2010.pdf>

Wendling B & Mather N 2009 *Essentials of evidence-based academic Interventions* John Wiley & Sons

What Works Clearing House *Response to Intervention in Primary Grade Reading* www.readingrockets.org/article/response-intervention-primary-grade-reading