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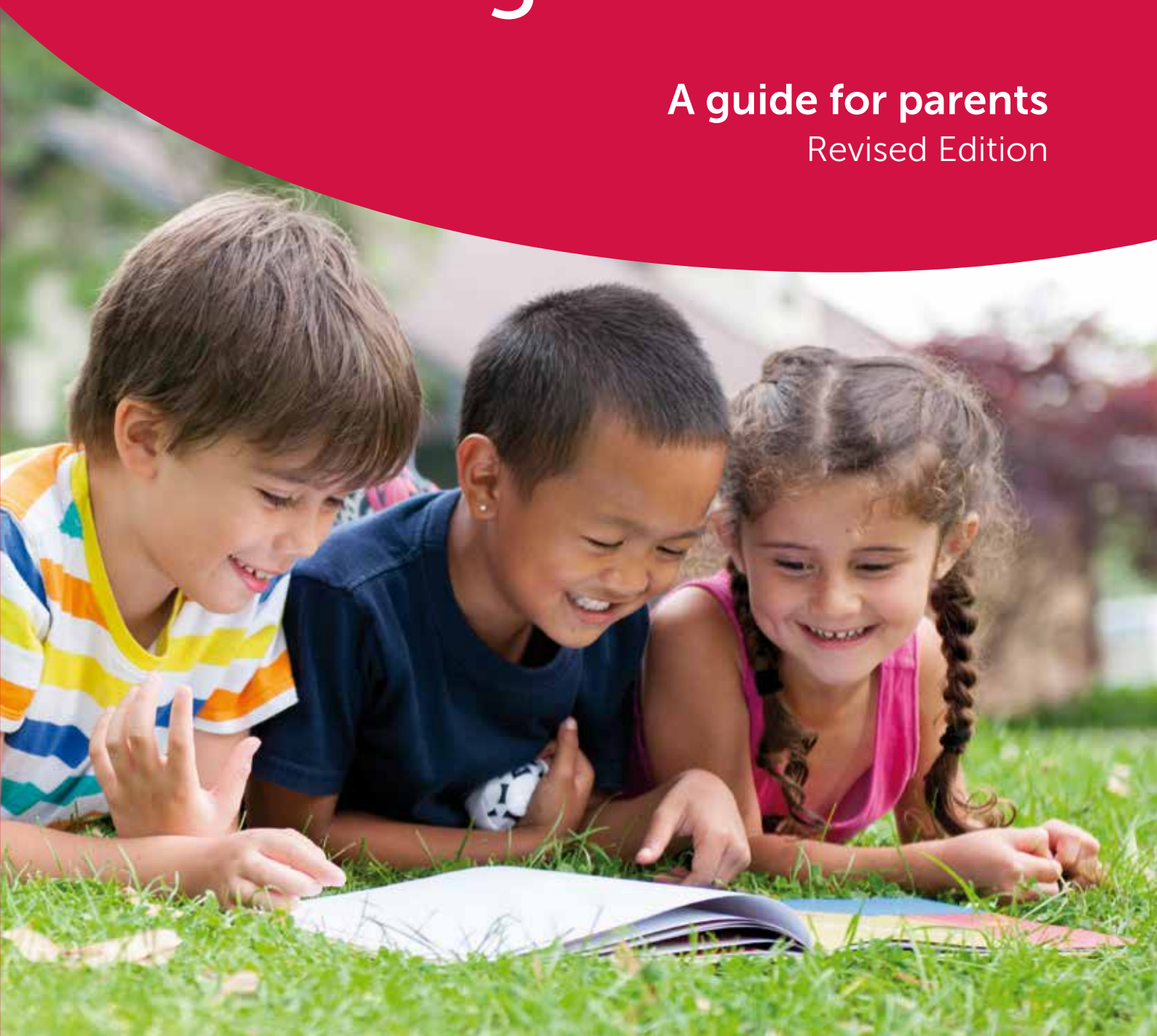
Understanding Learning Difficulties

A guide for parents

Revised Edition



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Introduction

The majority of children in Australia start school with a degree of trepidation but with an expectation that they are about to commence an exciting journey of discovery; learning many new skills including how to read and write. Parents share both this excitement and trepidation, but also assume that within the first few years of schooling their children will take the steps required to develop competencies in both literacy and numeracy.

It is certainly the case that with effective instruction, appropriate support and ongoing encouragement most children do learn both the foundation skills, and then the more complex skills, required to read, write, spell and calculate.

There are, however, some students who, despite attending school regularly and receiving adequate instruction and support, struggle to acquire these essential academic skills. These students may have a learning disability.

It is estimated that the number of children in Australia with learning disabilities is between three and five percent of the total student population. Such learning difficulties can have a far-reaching impact on an individual's academic achievement as well as on their emotional wellbeing.

Many parents or carers notice that their child is struggling at school but are unsure about the steps they should take or how best to support their child. There are often many questions that parents have regarding the underlying reasons for their child's specific difficulties and who they should seek advice and assistance from.

Many parents or carers notice that their child is struggling at school but are unsure about the steps they should take

This Guide is designed to answer some of these questions. It has been developed to provide parents and carers with current information about the nature of learning disabilities and to offer practical guidance on the most appropriate identification, intervention and support. This edition has been revised to be consistent with new research findings and current practice, but includes much of the highly-valued information from the first edition.

The difference between a learning difficulty and a learning disability

Many children do find learning the foundation skills in literacy and numeracy quite difficult and, if this is not addressed early, may go on to struggle in almost all areas of the curriculum for years to come.

The Australian Bureau of Statistics (ABS) found in a recent survey that one in every two 15 to 19 year olds in Australia had such low literacy skills that they would not be able to meet the demands of a modern workplace.

Although some of these students may have a learning disability, many don't. They have not developed adequate skills due to a range of cumulative factors and are generally described as having learning difficulties.

Children with **learning difficulties** underachieve academically for a wide range of reasons, including factors such as: sensory impairment (weaknesses in vision or hearing); severe behavioural, psychological or emotional issues; English as a second language or dialect (ESL or ESD); high absenteeism; ineffective instruction; or, inadequate curricula. These children have the potential to achieve at age-appropriate levels once provided with programs that incorporate appropriate support and evidence-based instruction.

Children with **learning disabilities** have unexpected and persistent difficulties in specific areas of academic achievement as a result of an underlying neurodevelopmental disorder, the origin of which includes an interaction of genetic, cognitive and environmental factors. One of the defining features of a specific learning disability is that the difficulty continues to exist, despite appropriate instruction and intervention.

Children with a learning disability:

- have underlying difficulties in a key academic skill which have a lifelong impact;
- do not perceive or process information as efficiently or accurately as children without a learning disability;
- often have a family member with learning difficulties;
- do not respond to appropriate intervention in the expected way;
- do not have an intellectual disability and may have highly developed competencies in numerous areas.

Percentage of Australian Children with a Learning Difficulty or Disability

Left unidentified and without appropriate intervention, a learning disability puts a child at significant disadvantage, with little likelihood of achieving at levels close to their academic potential.

The early identification of students at risk of literacy and numeracy difficulties, along with the introduction of effective intervention and support, is the key to academic success.

What do we know about types of learning disabilities?

A specific learning disability (specific learning disorder) is characterised by persistent difficulties learning a key academic skill. This academic underachievement is unexpected, and is not the result of a more general learning difficulty, such as an intellectual disability. There are a number of specific learning disabilities that have the potential to impact on a student's school performance:

- A specific learning disorder with impairment in reading, often referred to as **dyslexia**.
- A specific learning disorder with impairment in written expression, often referred to as **dysgraphia**.
- A specific learning disorder with impairment in mathematics, often referred to as **dyscalculia**.

Do students with specific learning disabilities learn differently?

Students with specific learning disabilities do not require an inherently different teaching approach in order to learn. Essentially, all students benefit from exposure to high-quality, evidence-based programs and teaching strategies, including explicit instruction and dual coding (the simultaneous presentation of verbal and visual information). However, this is especially the case for individuals with specific learning disabilities. The main learning difference observed between individuals with a specific learning disability and those without is the length of time it takes them to learn particular academic subskills. Individuals with specific learning disabilities often require more time and more repetition in order to master these skills. However, once they have mastered the skill, or developed an understanding of the new concept, they are likely to perform as well as, or possibly even better than, their peers. It is also the case that although individuals with learning disabilities have difficulty in specific areas, they will often excel in others.

Specific learning disorder with impairment in reading (dyslexia)

A specific learning disorder with impairment in reading (dyslexia) is the most common form of learning disability, accounting for 80% of all children identified. Problems with reading, and related difficulties in comprehension, spelling and writing are common for these children. Many people who have a specific learning disorder with impairment in reading (dyslexia) also experience difficulties with working memory, attention and organisational skills.

Dyslexia can be defined as:

> … a specific learning disability that is neurological in origin. It is characterised by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.*

When looking at identifying a specific learning disorder with impairment in reading (dyslexia), deficits in one or both of the following key academic areas are usually present:

- Inaccurate or slow and effortful word reading (e.g., reads single words aloud incorrectly or slowly and hesitantly, frequently guesses words, has difficulty sounding out words).
- Difficulty understanding the meaning of what is read (e.g., may read text accurately but not understand the sequence, relationships, inferences, or deeper meanings of what is read).

*This definition is the preferred definition of DSF and AUSPELD, as well as the International Dyslexia Association (IDA) and the National Institute of Child Health and Human Development (NICHD).

Specific learning disorder in reading (dyslexia) across the school years

Children who have a specific learning disorder with impairment in reading (dyslexia) will show some or many of the difficulties listed below. They may not display all of these characteristics.

Pre/Lower Primary School	Mid/Upper Primary School	Secondary School
■ Difficulties with oral rhyming, syllabification, blending and segmenting of sounds in words ■ Delayed speech and language development ■ Limited spoken vocabulary ■ Poor understanding of letter-sound links ■ Difficulty in learning letter names ■ Slow and inaccurate word recognition ■ Inability to read nonsense words ■ Difficulty understanding reading material ■ Difficulties with tasks requiring reasonable working memory capacity - such as following instructions or remembering sequential information	■ Reduced ability to isolate and manipulate individual sounds in words ■ Difficulties holding verbal information (e.g. instructions) in working memory ■ Slow to complete literacy-related tasks ■ Reading is slow and laboured ■ Visually similar words are often confused when reading ■ Trouble decoding unfamiliar words ■ Poor reading comprehension ■ A lack of interest in or avoidance of reading tasks ■ Ongoing difficulties in working memory	■ Poor reading fluency ■ Reduced reading comprehension (may need to re-read material many times to comprehend) ■ Disorganisation and difficulties with planning ■ Limited working memory ■ Word finding difficulties ■ A lack of interest in or avoidance of reading tasks ■ Working memory difficulties may become more pronounced as the demands of schooling increase

> "Learning to read was, and still is, so difficult for me. I couldn't understand how the other kids seemed to pick it up so easily while I struggled to read even quite simple words. I mostly guessed randomly – and just hoped I was right!"

Sarah, Age 14 years

Specific learning disorder with impairment in written expression (dysgraphia)

A specific learning disorder with impairment in written expression (dysgraphia) often remains undiagnosed. It is a persistent difficulty with written expression, handwriting and/or spelling that may occur in isolation, but more often, occurs in conjunction with dyslexia.

Dysgraphia can be defined as:

… a specific learning disability that is neurological in origin. It is characterised by difficulties with accurate and/or fluent written expression and by poor spelling and handwriting skills. These ongoing delays in writing are often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction.

Students who have a specific learning disorder with impairment in written expression (dysgraphia) often have to work much harder and longer to produce written work to the same standard as an individual with typically developing writing skills.

In the past, a specific learning disability with impairment in written expression was identified as either a language-based dysgraphia or a motor-based dysgraphia. It is now more common to use the term specific learning disorder with impairment in written expression when describing the language-based difficulties and developmental coordination when describing the motor-based difficulties associated with written expression. For further information on the defining features and functional impact of developmental coordination disorder, please see page 14.

When looking at identifying a Specific Learning Disorder with impairment in written expression (dysgraphia), deficits in one or both of the following key academic areas are usually present:

- Difficulties with spelling (e.g., may add, omit or substitute vowels or consonants).
- Difficulties with written expression (e.g., makes multiple grammatical or punctuation errors within sentences; employs poor paragraph organisation; written expression of ideas lacks clarity).

Specific learning disorder in written expression (dysgraphia) across the school years

Children who have a specific learning disorder with impairment in written expression (dysgraphia) will show some or many of the difficulties listed below. They may not display all of these characteristics.

Pre/Lower Primary School	Mid/Upper Primary School	Secondary School
■ Reading appears adequate but difficulties with writing are apparent ■ Avoids writing tasks ■ Poor spelling ■ Difficulties learning basic sentence structure and grammar	■ Writing is slow and laborious ■ Difficulties are more apparent as demands on writing ability increase through middle and upper primary school ■ Process of writing is effortful and tiring ■ Poor knowledge of writing conventions, such as punctuation, as well as lack of automaticity in spelling ■ Difficulty choosing correct spelling alternatives ■ Sentence and paragraph structure is poor ■ Inconsistency between verbal ability and written skills	■ Difficulties writing at the same speed as their peers ■ Great difficulties noted in transferring thoughts into written words ■ Apparent gap between oral and written language skills ■ Knowledge and application of essay structure is underdeveloped ■ Lack of detail in written expression ■ Written output is limited with far less work being produced in allocated writing time ■ Writing and spelling skills do not appear automatic ■ Poor spelling, including lack of knowledge of patterns in words and morphological knowledge (affixes and base words)

"Sometimes I can have the most amazing ideas for a story – or have the answer to a question in my head - but when it comes to writing it down – the idea or answer somehow turns into complete chaos!"

Thomas, Age 11 years

Specific learning disorder with impairment in mathematics (dyscalculia)

A specific learning disorder with impairment in mathematics (dyscalculia) is an innate difficulty in learning and comprehending mathematics. Children who have a specific learning disorder with impairment in mathematics (dyscalculia) have trouble understanding numbers, learning how to manipulate numbers, learning mathematical facts, and a number of other related difficulties.

Dyscalculia can be defined as:

… a condition that affects the ability to acquire arithmetical skills. Learners with dyscalculia may have difficulty understanding simple number concepts, lack an intuitive grasp of numbers, and have problems learning number facts and procedures. Even if they produce a correct answer or use a correct method, they do so mechanically and without confidence.

The severity of mathematical impairment differs depending on the individual. Although it can be argued that many of the defining features of a specific learning disorder with impairment in mathematics (dyscalculia) can also be seen in children who do poorly in mathematics, it is the degree of these difficulties and the resistance to remedial intervention that set children with dyscalculia apart from others with learning difficulties.

When looking at identifying a Specific Learning Disorder with impairment in mathematics (dyscalculia), deficits in one or both of the following key academic areas are usually present:

- Difficulties mastering number sense, number facts or calculation (e.g., has poor understanding of numbers, their magnitude, and relationships; counts on fingers to add single-digit numbers instead of recalling the math fact as peers do; gets lost in the midst of arithmetic computation and may switch procedures).
- Difficulties with mathematical reasoning (e.g., has severe difficulty applying mathematical concepts, facts, or procedures to solve quantitative problems).

Specific learning disorder in mathematics (dyscalculia) across the school years

Children who have a specific learning disorder with impairment in mathematics (dyscalculia) will show some or many of the difficulties listed below. They may not display all of these characteristics.

Pre/Lower Primary School	Mid/Upper Primary School	Secondary School
■ Difficulties organising objects and sets of items in a logical way	■ Counting skills mastered but persistent use of ineffective strategies for calculation	■ Difficulties learning maths concepts beyond basic number facts
■ Difficulties recognising printed numbers	■ Difficulty telling the time and recalling times tables	■ Difficulties with mental maths
■ Poor counting skills and knowledge of counting strategies	■ Delays in the retrieval of overlearned maths facts	■ Difficulties finding more than one way to solve a maths problem
■ Difficulties using counting strategies (counting in 2s, 5s etc.)	■ Difficulties attending to numerical operator (e.g. +,-,x, ÷)	■ Delays in learning and recognising maths vocabulary
■ Difficulties with mastering number knowledge (recognising how many items make a set without counting)	■ Difficulties in applying concepts of borrowing and carrying (place value)	■ Difficulties in reading and interpreting graphs, charts and maps
■ Difficulties in using effective counting strategies for addition (counting all instead of counting on)	■ Difficulties with measurement and understanding spatial relationships	■ Poor perception of the passage of time and difficulties sticking to a schedule
■ Difficulties decomposing numbers	■ Difficulties with multi-step calculation procedures	■ Poor budgeting skills
■ Difficulties remembering arithmetic facts	■ Increased anxiety and negative attitude towards maths	■ Difficulties with spatial directions

"I have always struggled with maths. I have trouble reading a clock, figuring out change, and other basic maths skills. Numbers make me feel anxious, and that is hard because you need to use maths all the time."

Jason, Age 16 years

Other developmental disorders that can impact on learning

In addition to specific learning disorders, there are also a number of other developmental disorders which can have a negative impact on how a child develops academic skills. Two of these disorders are:

- Developmental language disorder (DLD)
- Developmental coordination disorder (DCD)

Developmental language disorder

Developmental language disorder (previously known as specific language impairment) is diagnosed when a student has persistent language problems that continue into school age. Difficulties with the comprehension and use of words and sentences to convey information and ideas are common for these students. Problems can occur in different modalities of language: spoken, written and/or signed. At school entry, approximately two children in every class of thirty students are considered to experience a language disorder significant enough to impinge on their academic progress. However, language difficulties often go undetected and may not be evident unless the student's receptive (understanding of) and expressive (use of) language is assessed formally. These students typically require additional help beyond targeted classroom support and should be referred to a speech pathologist for more detailed evaluation and intervention tailored to their specific needs.

Developmental language disorder can be defined as:

> … difficulties with language development that endure into middle childhood and beyond, with a significant impact on everyday social interactions, emotional well-being, behavioural regulation and educational progress. It is characterised by difficulties understanding and using words and sentences to express meanings, which are unlikely to resolve without specialist support.

It is recognised that developmental language disorder emerges in the course of development, rather than being acquired or associated with a known biomedical cause. However, a language disorder may occur as part of a more complex pattern of impairments that requires a specific intervention pathway (e.g. language disorder associated with autism spectrum disorder, intellectual disability, or cerebral palsy).

Developmental language disorder across childhood

Children with developmental language disorder (and language disorder associated with other conditions) will show some or many of the difficulties listed below. They may not display all of these characteristics.

Early Years	Primary School	Secondary School
■ Poor use of gestures ■ Cannot follow simple directions ■ Difficulties naming objects or pictures ■ Speaks using only two or three-word phrases ■ Has trouble putting words together into sentences ■ Reduced use of action words e.g. "doggy run", "push car" ■ Difficulties learning songs and rhymes ■ Limited engagement in imaginative play ■ Speech that can be hard to understand ■ Difficulties knowing how to take turns when talking with others ■ Difficulties learning the alphabet	■ Difficulties remembering and following spoken instructions ■ Difficulties understanding what is heard or read ■ Trouble retrieving specific words i.e. uses 'thing' or 'stuff' ■ Difficulties in telling or re-telling a coherent story ■ Incorrect grammar when speaking or writing ■ May look around and copy others' actions or written work ■ Difficulties with blending and segmenting of sounds in words ■ Poor turn-taking in conversation ■ Misinterprets jokes or the point of what was meant ■ Difficulties following playground rules	■ Limited knowledge of word meanings ■ Relies on simple words to express themselves ■ Word finding difficulties ■ Provides too much or too little information in speaking or writing ■ Trouble forming grammatically correct sentences ■ Difficulty understanding spoken or written information ■ Lack of detail in written expression ■ Avoids or may have difficulties starting class work or homework ■ Difficulties paying attention ■ Difficulties knowing how and when to use language in social situations

Developmental coordination disorder

Developmental coordination disorder (DCD) is a motor-based disorder that affects approximately 5% of primary-school aged children. It is also known as dyspraxia or motor-based dysgraphia. Children with DCD have difficulties learning and performing motor skills and their coordination is below expectation for their age. These difficulties may be displayed as slowness or inaccuracy in the performance of fine and/or gross motor skills which compromises performance in activities of daily living and often interferes with academic achievement. DCD may be suspected if a child is unusually clumsy and/or is showing difficulties in learning and/or performing gross or fine motor skills. Children with DCD often experience difficulties with speed and/or legibility of handwriting that may affect their ability to express themselves in writing. DCD may therefore co-exist with a specific learning disorder with impairment in written expression, but is differentiated from it by the emphasis on the motor component of the written output rather than the content.

Developmental coordination disorder across the school years

Children with developmental coordination disorder will show some or many of the difficulties listed below. They may not display all of these characteristics.

Pre/Lower Primary School	Mid/Upper Primary School	Secondary School
■ Difficulty colouring or drawing in a coordinated way ■ Difficulty holding a pencil ■ Letters are poorly formed ■ Handwriting shows poor spacing and sizing of letters and words ■ Letter forms are frequently confused ■ Difficulty completing puzzles or building with blocks ■ Difficulty buttoning clothes, doing up zippers, and tying shoelaces ■ Difficulty using rulers and scissors accurately and efficiently ■ Delays in throwing and catching, hitting and/or kicking a ball ■ Difficulty negotiating playground equipment ■ Poor organisational skills ■ Difficulties planning and prioritising tasks ■ Reduced general activity levels ■ Reduced participation in sport	■ Handwriting is immature and slow ■ Slow and inaccurate in building models ■ Difficulty playing ball games (especially in teams) ■ Difficulty organising belongings when motor sequencing and coordination are required ■ Trouble managing a full school day due to poor strength and endurance ■ Poor organisational skills ■ Difficulties planning and prioritising tasks ■ Reduced general activity levels ■ Reduced participation in sport	■ Legibility and/or speed of handwriting is poor ■ Slow and inaccurate typing ■ Difficulty taking notes accurately and efficiently ■ Poor organisational skills ■ Difficulties planning and prioritising tasks ■ Reduced general activity levels ■ Reduced participation in sport

For further information and resources please see:

The Canchild website www.canchild.ca/en/diagnoses/developmental-coordination-disorder

Identifying and diagnosing specific learning disorders

The decision to seek professional advice, and a possible assessment to determine whether or not a child has a learning disability, is a complex one. It should only occur after a number of other steps have been taken - including a period of observation and collection of relevant information. This is important for several reasons.

Firstly, a child's teacher is likely to be well-placed to observe whether there is a specific area of concern in relation to their progress. Schools frequently collect a great deal of data on their performance including information gathered through: observation; screening; and, regular in-class assessment of individual child's progress. This means that a child's teacher will be able to identify specific areas of concern and gaps in learning. They will also be able to make suggestions about the appropriate strategies to adopt in the first instance – both in-school and at home.

Secondly, prior to a formal assessment, it is important to ensure that children are provided with well-designed instruction targeting the area in which the child is struggling. This instruction should be explicit, systematic and cumulative and needs to form the basis of an intervention that continues for at least six months. This is because one of the criteria for learning disability diagnosis is to evaluate how well a child responds to targeted intervention over an extended period of time (at least six months). Many children make rapid progress once given appropriate systematic instruction, suggesting that their difficulties are the result of gaps in their knowledge and skills, rather than a persistent and enduring learning disability.

Thirdly, the information gathered over this period will assist the practitioner conducting the assessment (in the event that one is required) both to determine an understanding of the level of functional impact the child is experiencing and to better inform decision-making in terms of ongoing intervention and support.

There are times when it becomes obvious very quickly to both the parent and the teacher that a child is experiencing significant difficulties with either the language or learning demands (or both) of the classroom and, on these occasions, it is often in the child's best interests to seek professional advice from either a speech pathologist or a psychologist as early as possible. They are unlikely to assess for a learning disability (assuming the child is only four or five years of age) but will provide a range of recommendations for both the teacher and the parent to follow and will assess whether there is evidence of longer term risk factors.

Importance of early identification

In order to diagnose a specific learning disorder it is necessary to establish that a child is experiencing an unexpectedly high level of difficulty learning in a particular academic area. (For example, it is recognised that children who have a specific learning disorder with impairment in reading (dyslexia) will generally have ongoing difficulties reading accurately and fluently.) It is not really possible to make judgements about academic performance too early because all children make errors and work laboriously when they first start learning to read, spell, write and calculate. This is only to be expected. It becomes 'unexpected' when children continue to struggle – or progress very slowly – for a much longer period of time than we would expect.

However, this certainly doesn't mean that teachers and parents should wait for the child to fail before they take action.

Early intervention is vitally important for any child at risk of literacy and numeracy failure and there are many indicators to suggest that the essential foundation skills are not being established. In many cases, it becomes apparent prior to year one when children are in the Foundation or Pre-Primary years and beginning to learn the fundamental skills required for successful literacy and numeracy learning. Children may have difficulties:

- hearing the sounds in words;
- recognising that certain words rhyme or that strings of words start with the same sound;
- learning the names and sounds of the letters of the alphabet;
- learning the names and values attached to numbers;
- remembering the shape of letters and numbers and how to write them;
- reading simple words accurately, without guessing from context or using picture cues.

Some children have difficulty remembering and repeating a short sentence or a nonsense word, while others take a long time to name things, even when it is something they are familiar with.

Many of the skills identified above are dependent on cognitive processing and memory. Students with learning disabilities are often found to have difficulties with **phonological processing, orthographic processing** and **working memory**.

Phonological processing is a term used to describe the way we process language. It includes our awareness of the sounds and structure of the sentences and words we hear, how well we remember speech, and how quickly we can name things that we know.

Orthographic processing relates to the processing of written language and starts with our ability to remember the shape and form of the letters of the alphabet as well as the sounds they represent. It also refers to our ability to remember English spelling patterns and rules.

Working memory is the memory space we use to hold small amounts of information while we manipulate it in some way. For example, we use working memory to solve mental arithmetic problems or follow a set of directions. It is different from simple short-term memory because it involves simultaneous 'storage' and 'processing'.

*For more information about these three areas of cognitive processing see **Appendix 1.***

When should an assessment be considered?

In the event that students continue to struggle despite targeted intervention, an appropriate assessment should be considered. If the student appears to be experiencing language-related difficulties then an assessment by a Speech Pathologist is recommended, whereas if the difficulties are specifically related to learning in a particular academic area, then an assessment by a Psychologist, ideally with experience in the education field, should be sought.

Who can diagnose a specific learning disorder?

While a child's teacher or tutor may be able to screen for possible difficulties in any given academic area, it is important that the actual diagnostic process be undertaken by a specialist in the area. This involves a Psychologist (preferably with educational and/or developmental training) in the identification of specific learning disorders.

When considering other developmental disorders that can impact on learning, Occupational Therapists can diagnose developmental coordination disorder; and Speech Pathologists investigate difficulties related to developmental language disorders or childhood apraxia of speech.

It is important that the diagnosis is made by a practitioner who is qualified to administer the range of standardised assessment tools required to make a clinical diagnosis. Depending on the assessment required, these tests may include standardised measures of: intellectual ability and cognitive skills; expressive and receptive language ability; underlying processing strengths and weaknesses; and, academic achievement across a range of domains; assessed under a range of conditions (e.g. timed versus untimed). In order to administer these tests, expertise in test administration and registration with a regulatory body, such as the Australian Health Practitioners Registration Authority, is required. The diagnosis of a specific learning disorder cannot be made by someone who assesses vision, hearing, movement or any other skill in isolation.

How is a specific learning disorder diagnosed?

Historically, there has been a great deal of debate over the methods used to diagnose learning disabilities and the associated recommendations for intervention made as a consequence of diagnosis.

More recently, consensus has been reached, both nationally and internationally, on an approach to assessment that takes into account a student's educational experiences as well as their performance on a range of standardised tests. It is generally agreed that 'specific learning disorders' are one of a number of neurodevelopmental disorders. The current DSM-5 guidelines for Psychologists undertaking learning disability assessments specify that specific learning disorders with impairment in reading (dyslexia), and/or impairment in written expression (dysgraphia), and/or impairment in mathematics (dyscalculia) are diagnosed through:

- A clinical review of the individual's developmental, medical, educational, and family history;
- Reports of test scores and teacher observations; and,
- An evaluation of the individual's response to academic interventions.

In addition to the four diagnostic criteria outlined on the following page, many children with learning disorders are found to have processing weaknesses. This is particularly the case for reading and written expression disorders. As a consequence, assessments will often include a review of phonological processing, orthographic processing and working memory. This information helps to inform ongoing intervention and support.

A summary of the DSM-5 diagnostic criteria for specific learning disorder diagnosis:

Criteria	
A	Ongoing difficulties in the school-age years learning and using at least one academic skill (e.g. reading accuracy/fluency; spelling accuracy; written expression competence and fluency; mastering number facts). These difficulties have persisted and failed to improve as expected, despite the provision of targeted intervention for at least six months. This intervention should be recognised as evidence-based and ideally delivered by an experienced and qualified person.
B	The difficulties experienced by the individual will be assessed using standardised achievement tests* and found to be at a level significantly lower than most individuals of the same age. Sometimes individuals are identified with a learning disability even though they are performing within the average range. This is only the case when it can be shown that the individual is achieving at this level due to unusually high levels of effort and ongoing support.
C	The difficulties experienced by the individual usually become apparent in the early years of schooling. The exception to this is where problems occur in upper-primary or secondary school once the demands on student performance increase significantly. For example – when students have to read extended pieces of complex text or write at a more sophisticated level under timed conditions.
D	Specific learning disorders will not be diagnosed if there is a more plausible explanation for the difficulties being experienced by the individual. For example – if the individual has: an intellectual disability; a sensory impairment; a history of chronic absenteeism; inadequate proficiency in the language of instruction; a psychosocial condition; or, not received appropriate instruction and/or intervention.

*Standardised achievement tests are tests that have been developed by experts and trialled with large numbers of individuals to check their validity. They are only delivered by practitioners who have been trained to use the tests and interpret the results achieved.

All four criteria must be met and the level of functional impact is determined as being mild, moderate or severe. The level of functional impact relates to the degree to which the child struggles to perform in comparison with his/her peers and the amount of support required, both in terms of remediation and accommodation, to enable the child to participate effectively in all classroom activities.

The Response to Intervention (RTI) model

The diagnosis of a learning disability must consider how well the child responds to intervention. The "Response to Intervention" (RTI) model refers to a process that highlights how well students respond to changes in instruction in the classroom. Individual students' progress is monitored and results are used to make decisions about further instruction and intervention. Essentially, schools can use the RTI process to help students who are struggling academically or behaviourally and to identify students who may have learning disabilities.

A brief summary of the RTI process taken from the National Centre on RTI website, reads:

"With RTI, schools identify students at risk for poor learning outcomes, monitor student progress, provide evidence-based interventions and adjust the intensity and nature of those interventions depending on a student's responsiveness".

The National Centre's website is very comprehensive and explores the RTI approach in detail. Visit www.rti4success.org for more information.

What does the RTI process look like?

The RTI process typically has three waves (or three tiers) which cater for the needs of all students within the classroom. Each wave provides differing levels of support and should focus on how to make the student more successful rather than focussing on the student's lack of success. Providing high quality instruction in literacy and numeracy ensures schools are better equipped to identify and cater for the needs of students with both learning difficulties and learning disabilities. Using programs that are supported by reliable research evidence is central to this approach. The use of a structured synthetic phonics program is crucial to reading and spelling instruction, as is the use of programs and/or teaching strategies to target and support additional areas of need such as working memory, vocabulary, comprehension and number work.

Wave 1 – The whole class

All students receive high quality curriculum and evidence based strategies and programs in the regular education classroom with consistency across year levels. The teacher assists all learners and monitors their progress at regular intervals.

Wave 2 – Small group interventions

The school provides small group interventions to children who need more support than they are receiving from the general curriculum. It is expected that children who receive the additional group support at this level will 'catch up' with their peers. It is essential that students receive targeted intervention that is both more intensive (i.e. small groups) and more explicit (step-by-step instruction targeted at specific area of need) if the aim is to reduce the gap between them and their peers. Otherwise they will continue to fall further behind. Children should continue to be included in whole-class instruction, receiving small group intervention in addition to this.

Wave 3 – Intensive interventions

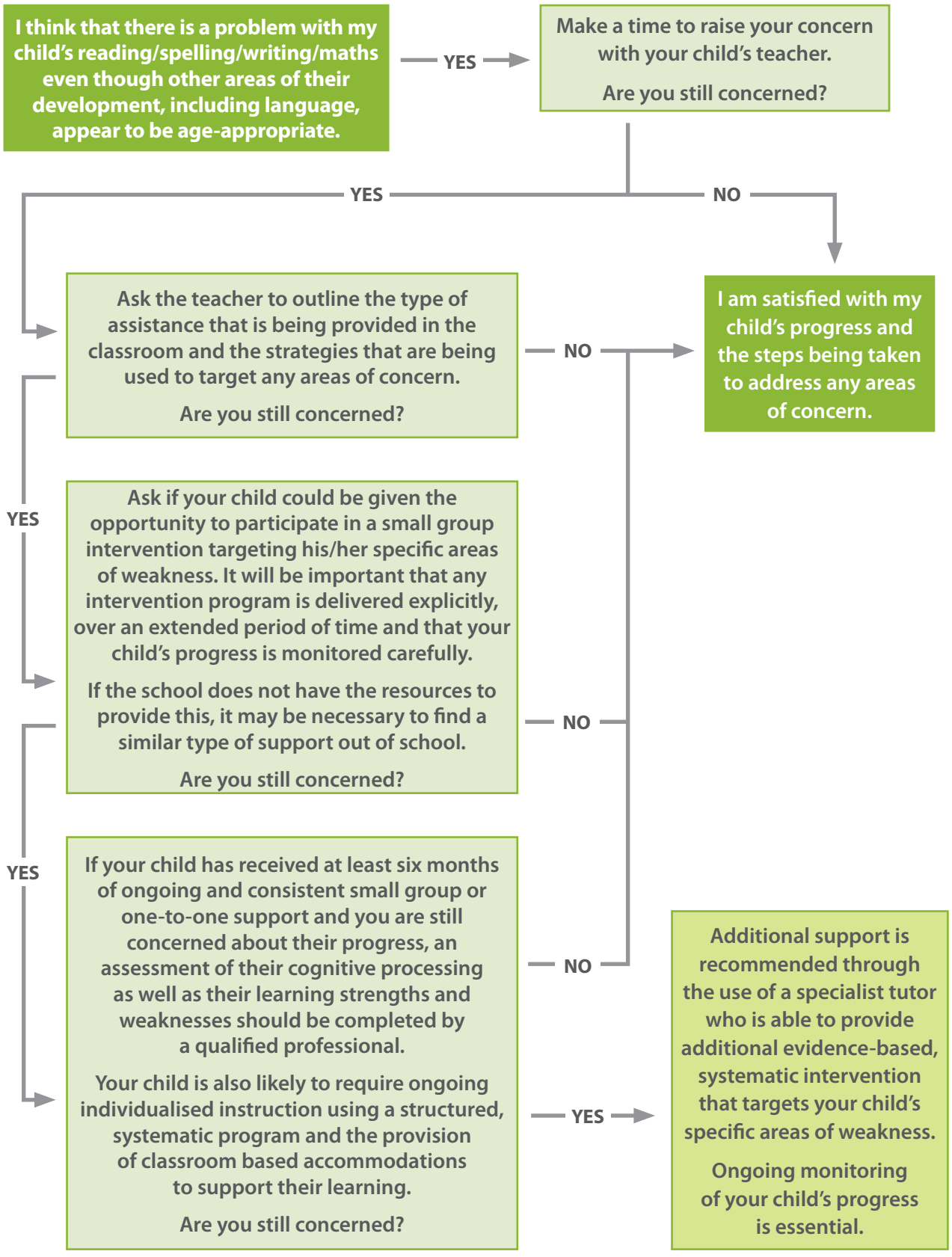
Students are given individualised support and instruction. This wave is for children who are underachieving despite the provision of targeted small-group intervention. An Individualised Education Plan (IEP) or Individualised Learning Plan (ILP) may need to be developed, incorporating regular assessments and monitoring of progress. A professionally developed evidence-based program delivered one to one is often a central component of an IEP for students with learning disabilities. It is essential that the program is delivered with fidelity (that is, it must be given according to the instructions). Participation in small group work may also continue within the classroom. For more information about IEPs see **Appendix 2**.

Adopting the RTI model has the potential to reduce the number of students who present with learning difficulties as a result of poor instruction and/or curricula. It also allows for earlier identification of students who continue to fail to make progress despite high quality instruction and evidence-based intervention. It is at this point that an individual assessment to determine whether the child meets the criteria for a specific learning disorder diagnosis may become important. A combination of RTI and individual assessment is important in diagnosing specific learning disorders.

A summary: Identifying and diagnosing specific learning disorders

- An assessment clarifies the specific needs of the child and helps direct parents and teachers to appropriate intervention and support.
- There are specific criteria that a child must meet in order to be diagnosed with an SLD.
- Assessment should be completed by a qualified specialist using standardised assessment measures once appropriate steps have been taken in the school setting.
- The Response to Intervention (RTI) approach provides the student with different levels of support depending on their needs.

What to do next: A decision making chart for parents



Selecting a successful intervention program

For students with learning disabilities, extra support and remediation targeting their specific areas of need are often required to ensure they have the best chance of developing appropriate skills. This may occur through in-school support or in the form of individual tutoring by a specialised teacher or a trained parent outside of school time or through in-school support. There are many intervention programs available for teachers and tutors to use, some of which are produced commercially and others that are freely available on the internet. It is important to note that the cost of the program does not necessarily determine the effectiveness. The following criteria are associated with programs most likely to achieve successful outcomes.

Evidence-based	It is important that the program is based on current research evidence and that its effectiveness is supported by independent reviews (i.e. not evaluated solely by the program manufacturer). Structured synthetic phonics (SSP) programs are considered to be evidence-based because very strong independent research collected worldwide shows that SSP programs provide the best opportunity to produce significant literacy improvement.
Explicit and direct instructional methods	Content is taught clearly and directly, not in an embedded or implicit manner. Explicit instruction directs student attention towards specific learning in a highly structured environment.
Incorporates dual coding	Programs that involve concurrent visual and verbal encoding, referred to as *dual coding*, aid retention and recall of information, as the learner creates multiple retrieval routes to the same information.
Cumulative sequence	Builds on what has already been learned and previous learning receives further practice.
Sequential	A prescribed sequence of learning targets presented in small steps.
Repetitive	Regular systematic review of concepts and over-learning to ensure learning is retained in long term memory.
Systematic	Concepts and skills are taught in a step-be-step manner. For example, in a structured synthetic phonics program, a complete set of phoneme-grapheme relationships are taught sequentially, cumulatively and systematically.
Appropriate pace	It is important to introduce concepts and skills in small steps but at a reasonable pace. Each component is taught on its own with ample opportunity for practice. In subsequent sessions (preferably daily) – previous learning is reviewed, new concepts and skills are taught, and – again – ample opportunity for practice is provided.
Cover all areas of instruction needed	For example, possible areas for literacy remediation include: instruction targeting phonemic awareness, phonics, decoding, fluency, comprehension, spelling, grammar, sentence structure, and vocabulary.
Assessment	Regular ongoing assessments of concepts taught to ensure the student is provided with instruction, resources and activities at the right level.

Further explanation and examples of structured synthetic phonics programs can be found in ***Appendix 3****.*

Beware of snake oil salesmen and spin doctors

Unfortunately, there are many individuals and organisations that make misleading statements regarding the nature of learning disabilities and/or appropriate interventions to remediate these disabilities. It is important to be wary of claims that a learning disability can be remediated following a brief, 10-week treatment, or that reading-based learning disabilities are a visual problem. With appropriate intervention, most individuals with learning disabilities will make gains in their academic skills. However, this will almost always require a considerable period of intensive remediation targeting their particular area/s of weakness.

Can intervention 'cure' a learning disability?

Essentially, a specific learning disability is, by definition, a persistent and enduring difficulty in a particular academic domain that will remain with a person throughout their life. There are no magic cures or simple solutions that have been identified or that can be purchased. However it is certainly the case that the impact of the learning disability can be reduced significantly through the provision of effective intervention (ideally introduced at an early age) and appropriate accommodations. With effective support, individuals with learning disabilities can achieve at extremely high levels in their chosen field. They may have to work harder and persist longer than their peers but they should not view their learning disability as a barrier to success.

Over time, effective compensatory strategies are often developed and, as a result, the visible signs of a learning disability can become less obvious. These frequently reappear when the individual is performing more complex tasks; becomes tired or anxious; or, is working under difficult conditions (eg. timed examinations).

Unfortunately, there are times when organisations, or individuals, promote a particular program, aid or service and claim that it has the potential to cure or prevent learning disabilities and other developmental disorders. The reality is that if a product 'cures' a learning disability, then the person almost certainly didn't have the learning disability to start with.

The promotion of these products is often accompanied by clever marketing, making them appear very attractive to parents and teachers. It is important to be very wary of any product, aid or service that is promoted through:

- **Testimonials** (individual 'stories') about the remarkable outcomes achieved. These are selected to encourage sales and the unsuccessful outcomes are rarely publicised. For every one success story there may be nine failures. It is also difficult to tell exactly what is being measured and how an individual may have performed if the same amount of time was spent on an alternative program.
- **Claims relating to Neuroscience** or the capacity of the product to 'change an individual's brain'. All learning essentially changes the brain, whether it's learning how to ride a bicycle or use the remote control. Producing colourful pictures of developing neurological pathways is not evidence that the product 'works'. There is no available evidence for any product or program currently on the market to suggest that the so-called 'neurological benefits' of the program will increase an individual's academic capacity.
- **Research conducted 'in-house'** suggesting significant academic improvement but not backed up by independent research evidence. It is important that there is independent evidence that either supports the claims relating to academic achievement directly or that supports the underlying approach (e.g. structured, systematic phonics). If claims are being made that a particular product will significantly improve specific academic outcomes there should be some available independent evidence to support these claims.
- **Claims of a flow-on effect.** This relates to products (e.g. exercise regimes, nutritional supplements, repetitive computer-based activities) that do not specifically target the area of weakness but claim that by participating in the advertised regime, academic results will improve. There is no available evidence to conclusively support these claims.

What does the research tell us about different interventions?

There are a vast number of programs, products and resources available for both teachers and parents to select from for intervention purposes. Some of the more popular approaches and products have been reviewed by university-based research teams* to determine their value for individuals with learning difficulties and disabilities. Their findings and recommendations are summarised in the following table.

The decision to recommend or not recommend particular programs has been based on the current evidence available linking particular programs and instructional approaches to improved results in specific academic areas. Research strongly suggests that interventions for learning disorders should target the component skills of reading, spelling, mathematics and writing – not other areas of functioning. They should also be cost effective. It is possible that some of the findings may change as additional research is completed and published.

The idea that individuals have unique learning styles has been a popular theory for many decades. However, there is little evidence to indicate that individuals have an innate preference for receiving new information via a particular sense (e.g., visual, auditory, or kinaesthetic). Another instructional approach that has maintained popularity is that of "multi-sensory" learning. Whilst providing information to children in various formats is likely to be beneficial, "multi-sensory" teaching approaches are not well validated in current research.

The first two sections of the table relate to **Direct Instruction** programs and **Structured Synthetic Phonics** programs. There are a great many programs and resources that can be viewed as falling under these two headings and only a small number of examples have been included in the table.

Direct Instruction (DI) refers to a rigorously developed, fast-paced approach that is designed to teach individuals new skills in a step-by-step manner by instructors using a carefully designed script. Participants receive immediate feedback and are expected to achieve mastery of each skill before progressing to the next level. The research evidence available suggests that DI programs are frequently found to be amongst the most successful intervention approaches available.

Structured Synthetic Phonics (SSP) programs are designed to teach children the predictable relationships between the sounds of speech (phonemes) and the alphabet letters (graphemes) we use in written language. Essentially, when a child learns to read using synthetic phonics they learn to link letters to speech sounds and then blend (synthesise) these sounds together to read words. Analytic phonics programs typically introduce whole words and initial sounds only - anticipating that children will induce the other letter-sound relationships. In synthetic phonics programs the sound-letter relationships are taught in a predetermined sequence using a systematic and explicit approach. Children are taught to read and spell accurately and fluently beginning with simple words like at, in and pin before progressing to words comprising more complex spelling patterns such as light, strange and production. There is a wealth of research evidence available documenting the success of SSP programs as both a whole class approach to literacy instruction and as an intervention (delivered individually or in small groups). For more information on structured synthetic phonics programs see **Appendices 3 and 4**.

Program/Aid	Designed to Target	Research Evidence	Cost/Student	R
Direct Instruction (Some examples: Spelling Mastery, Reading Mastery, Elementary Maths Mastery, DISTAR programs, Teach Your Child to Read in 100 Easy Lessons)	■ Reading ■ Spelling ■ Maths ■ Language ■ Writing	Strong research evidence from independent studies indicating positive outcomes achieved across most academic areas when delivered with fidelity (i.e. the directions given to the instructor must be followed exactly as prescribed).	Low/Moderate (Depends on the program -e.g. Teach Your Child to Read in 100 Easy Lessons is Low / others are Moderate)	✓
Structured Synthetic Phonics Some examples: **Intervention:** Sounds~Write, MultiLit, MiniLit, MacqLit, Phonic Books UK. **Whole Class:** Sounds~Write, Letters and Sounds, PreLit, PLD Literacy and Learning, Little Learners Love Literacy, Phonics Books UK, No Nonsense Phonics Skills, Jolly Phonics, Read Write Inc.	■ Reading ■ Spelling	Very strong independent research evidence worldwide that shows programs based upon Structured Synthetic Phonics provides the best opportunity to produce significant improvements in childrens' literacy skills that are maintained long-term. Needs to be delivered by a skilled practitioner with fidelity.	Low/Moderate (depends on program and intensity of delivery)	✓
Reading Recovery	■ Reading	Independent research has produced inconsistent results and while some students make gains, it is typically those with mild reading difficulties. These children may have made more progress using a more cost-effective alternative program. Overall, little evidence to support its effectiveness in remediating significant reading difficulties, particularly when there is evidence of phonological processing weaknesses.	High	✗
Levelled Literacy Intervention (Fountas and Pinnell)	■ Reading	Limited independent research to support the program's effectiveness in remediating reading difficulties.	High	✗

R Recommended S Some Support

Program/Aid	Designed to Target	Research Evidence	Cost/Student	R
Behavioural Optometry	■ Reading • Writing • Motor skills • Attention	There is no scientific evidence to support the use of eye exercises or vision therapy to directly or indirectly treat learning disabilities.	Moderate/High	✗
Arrowsmith	■ Academics ■ Memory ■ Motor Skills ■ Speech and Language ■ Reasoning	No independent research evidence available to support claims that the Arrowsmith exercises – designed to improve neuroplasticity - improve academic skills or remediate learning difficulties.	High	✗
Brain Gym	■ Concentration and focus ■ Memory ■ Academics ■ Physical co-ordination ■ Relationships ■ Self-responsibility ■ Organisation skills	Supporting studies are methodologically flawed and provide no explanation of how the exercises bring about improvements. Overall, there is no good-quality, peer reviewed research evidence to support the claims made for the effectiveness of BrainGym in improving academic performance.	Low/Moderate (depends on intensity of delivery)	✗
Cellfield	■ Literacy skills ■ Language ■ Attention ■ Cognition ■ Working Memory ■ Executive Function ■ Processing	There is some debate about the theoretical underpinnings of the program and only one independent study has investigated its effectiveness. Therefore, due to a lack of research evidence, its potential to remediate deficits associated with learning disabilities cannot be commented on.	Moderate/ High (depends on intensity of delivery)	✗
Cogmed	■ Working Memory ■ Attention ■ Reading Comprehension ■ Mathematics	Although the program has been found in some studies to show improvements on tasks similar to those taught, there has been limited evidence that the benefits generalise to academic learning (e.g. reading, writing, maths) or are maintained over long periods. Positive results appear to be inconsistent within and across studies. Ongoing research is occurring but the current cost (very high) attached to delivery makes it difficult to recommend.	High	✗

R Recommended S Some Support

Program/Aid	Designed to Target	Research Evidence	Cost/Student	R
Fast ForWord	■ Language ■ Reading ■ Memory ■ Attention ■ Processing ■ Sequencing	Although some studies show benefits from the FFW program, these are no greater than those of other comparative, less expensive, intervention programs and do not appear to be maintained in the long-term.	High	✗
Coloured Glasses and Overlays	■ Reading	Limited evidence for the effectiveness of coloured glasses and overlays as an intervention for reading difficulties. Independent research shows no conclusive pattern of results and methodological issues. There is also no objective scientific evidence to support the existence of Scotopic Sensitivity Syndrome, also known as Irlen Syndrome.	Moderate/High (for glasses)	✗
Davis Dyslexia	■ Reading ■ Writing ■ Maths ■ Attention	Limited independent research evidence evaluating the program and its claims. Overall, there is a lack of theoretical and high quality research evidence to support the program's effectiveness.	Cost unknown	✗
Exercise-based Programs (Example: DORE/DDAT program)	■ Academic skills ■ Motor skills ■ Social skills	No scientific research that exercise programs will result in improvement in reading or other academic or social skills. There is also no evidence that such programs are effective treatments for ADHD or Asperger's syndrome.	Moderate/High	✗
Lexia Reading	■ Pre-reading skills ■ Reading ■ Spelling ■ Language (vocabulary, comprehension)	Several studies supporting the effectiveness of the older version of Lexia Reading. However, no studies have been conducted to date on the newer version (Lexia Core5), the Lexia for Older Students and Lexia Strategies' programs. Overall, the program seems promising, but further independent research is needed.	Moderate/High	S

R Recommended S Some Support

Program/Aid	Designed to Target	Research Evidence	Cost/Student	R
Lumosity	■ Memory ■ Attention ■ Speed ■ Flexibility ■ Problem solving	Inconsistent research evidence to support the program's effectiveness in improving targeted outcomes. To date there are no studies investigating its effectiveness in improving outcomes for those with learning disabilities.	Moderate	✗
Tomatis Method for Auditory Retraining	■ Attention ■ Emotional difficulties ■ Communication ■ Psychomotor skills ■ Foreign language learning	Like other sound-based therapies and listening programs, there is no convincing independent evidence to show that it is more effective than the control groups.	Moderate/High	✗
Orton-Gillingham	■ Reading ■ Spelling	The program incorporates several evidence-based principles, including a focus on language-literacy links and the teaching of systematic synthetic phonics. However, there is inconsistent evidence regarding the efficacy of the program. There are also few intervention studies to validate the use of multisensory instruction.	Moderate/High	S
Language, Learning and Literacy (L3)	■ Reading ■ Spelling	At the date of publication, there were no research studies evaluating the effectiveness of L3. Critiques of L3 have found that the program does not teach the five components of early literacy explicitly and systematically.	Low	✗
Dyslexie Font	■ Reading	Research indicates that any benefits seen when using the font were related to the spacing between letters rather than their shape. Wider spacing between letters may be helpful for struggling readers, but children still need to be able to read a variety of different fonts.	Low	S

R Recommended S Some Support

(Note: ✗ indicates that currently there is not sufficient evidence in relation to improved academic outcomes to recommend this program or approach)

*Dawson, G., & D'Souza, S. Behavioural Interventions to Remediate Learning Disorders: A technical report (2015), Centre for Brain Research and School of Psychology, The University of Auckland / Macquarie University Special Education Centre briefings - located at http://figshare.com/articles/MUSEC_Briefings_Archive/5096455
Bowen, C., & Snow, P. Making sense of interventions for children with developmental disorders: A guide for parents and professionals (2017)
Neilson R., & Howell, S. A critique of the L3 early years literacy program (2015). LDA Bulletin, 47(2), 8-12

Individual Education Plans (IEPs) explained

Students who require a modified curriculum or adjustments to the reporting of their achievement should have this information documented in an Individual Educational Plan (IEP), Individual Learning Plan (ILP), or differentiated learning plan. An IEP is a personalised written plan that describes how classroom instruction is to be varied and the school curriculum is to be modified to ensure that the student will have equal opportunity to fulfil their potential within the classroom. The plan may be developed by a team of people including you (the parent/guardian), the classroom teacher, support staff, and if appropriate, the student. Developing an IEP in a collaborative manner ensures that there is a shared understanding of the student's strengths and difficulties as well as the specific aims and strategies of the document.

There are many different formats for an IEP, but ultimately, it should be clear and easily understood by everyone involved. An IEP is essentially an Action Plan and should include:

- Both long and short term goals with a clear timeline;
- Information about the specific equipment, programs or approach being used;
- Information regarding the assessment, reporting and reviewing of the identified outcomes;
- A statement about who will be taking responsibility for implementation and coordination of the IEP;
- The timing and frequency of reviews.

Other information that may be listed on an IEP includes the student's strengths/skills, accommodations or modifications that will be implemented, and medical information (if appropriate). From the plan, teachers make adjustments to their classroom programs to address the identified student outcomes. Regular review of the IEP is important to determine if the goals or outcomes are being achieved and to alter the goals or strategies as needed. It is important to remember that this is only a plan and therefore it does not necessarily mean that appropriate interventions or modifications are actually happening. Parents can ensure that the plan is being used by making friendly enquiries with the student's teacher and school and keeping the lines of communication open. Further information about IEPs and the parent's role in this process can be found in **Appendix 2**.

Use of assistive technology

"Once I was given the opportunity to use a 'talk-to-text' program in many of my subjects, my academic results improved dramatically!"

Katie, Age 16 years

When considering the processing difficulties frequently evident in the profiles of children with learning disabilities, it is not surprising that the challenge to participate becomes even more difficult as the demands of schooling increase.

Whilst remediation and good quality literacy and numeracy instruction go some way towards improving childrens' underlying skills, the use of assistive technology not only allows children the opportunity to improve their understanding and engagement in the learning process, it also allows them to better demonstrate their skills and knowledge more independently and at a level more commensurate with their overall understanding.

What is assistive technology?

The term "assistive technology" is usually applied to electronic devices and computer hardware and software that increase or maintain the capabilities of an individual with a disability. Assistive technology (AT) includes those devices that assist all individuals, regardless of the presence of a disability, and those devices that have been specifically designed to assist individuals with a disability (adaptive technology).

For individuals with learning disabilities, the opportunity to use AT to support and reinforce the learning process along with reducing the functional impact of their learning disability, means that their overall level of success is greatly improved. As with other classroom accommodations, the purpose of using AT is not to provide the student with an advantage but rather, it reduces some of the burden of lower literacy or numeracy proficiency.

All individuals, including those without a learning disability, can benefit from using some of the assistive technologies available. AT can be used in a variety of manners within the classroom environment to support the general teaching process and to provide additional remedial support as it allows for repetition and rehearsal of learnt skills. AT use for general classroom instruction also allows for multisensory teaching opportunities that will not only benefit the student with a learning disability, but all students within the classroom.

The term "assistive technology" is usually applied to electronic devices and computer hardware and software that increase or maintain the capabilities of an individual with a disability

What are some examples of assistive technology?

Assistive technologies include, but are not limited to, the following:

Text to Speech	Allows any electronic text that can be highlighted to be read aloud by a computer or mobile device.
Reading Pens	Allows the individual to scan text in print mediums and convert it into voice. Some versions include an in-built dictionary that will display the definition of a word and read it aloud.
Voice Recognition	Allows a computer or enabled hand held device to be trained in how you speak, and once trained, to write down everything you dictate into any active textbox.
Digital Recorders	Enables individuals to recall, plan, practise speeches, practise pronunciations, and dictate information.
iPads and Tablets	Provides a multisensory learning experience and there are a large number of apps that can be used to support children across a variety of learning areas.
Electronic Spell Checkers	Uses phonetic patterns to suggest words for a poor speller when a computer is not available.
Word Prediction Software	Uses phonetic and grammar patterns to suggest words as each letter/word is typed.
Visual Search Engines	Displays a picture of a page rather than the text headings or written content of a webpage.
Literacy Specific Software	Used to support reading and writing. Includes templates for writing, graphic organisers, grammar checkers, and study tools.
Educational Software	Provides support for the development of phonological awareness and phonics.
Electronic Resources and Books	Can be used with reading software and mp3 players/iPods.

Some of the concerns raised by teachers, parents and children about the use of AT include: the cost of purchasing multiple software titles; the need to switch from one application to another; and, the lack of integration between the applications recommended and those used by the school. Companies such as Microsoft and Apple have responded to these concerns and have embedded a variety of different AT tools into their products.

The use of multimedia and electronic information allows children with reading disabilities to improve their comprehension of a topic or idea without being dependent on their reading ability

Examples of effective AT options for the child with a learning disability:

- The use of multimedia and electronic information allows children with reading disabilities to improve their comprehension of a topic or idea without being dependent on their reading ability;
- Computers and word processors can reduce the burden of editing and re-writing assignments, making the writing process faster and allowing children to work more independently;
- A photo taken with any device that has a camera may be used instead of copying information from a whiteboard. This information can be stored digitally and in some cases converted to text;
- An MP3 recorder on any device can record ideas and help overcome short term memory difficulties

When should assistive technology be introduced?

Some children will find it very beneficial to use assistive technology and educational software to support the early development of literacy skills and letter-sound awareness. Other children will find that their need for AT does not emerge until much later in their education.

Matching the child's needs with the use of assistive technology should happen when the need arises.

Early on in Primary school, children are more likely to benefit from the use of educational software and online learning programs to help support reading and spelling development. Children at this level are also likely to benefit from the multisensory nature of iPads, tablets and the interactive whiteboard.

In Upper Primary and Secondary school, the use of AT may be extended to the provision of assistive technology to accommodate for the difficulties that the student may be experiencing. Software such as Text to Speech allows for better comprehension of information and independent learning, whilst software to support the writing process can be introduced to assist with the high demand on writing in the later years of school.

Technology to assist with organisation, study skills, time management and memory can be introduced at any stage.

Supporting students with learning disabilities: the important role of parents

Students with learning difficulties or learning disabilities often find the day-to-day challenges of the classroom quite daunting. This may result in parents playing a multitude of roles in their efforts to support their child (or children) effectively.

Parents are often their child's main advocate and may find they are talking quite regularly to teachers, principals, tutors, Psychologists, Speech Pathologists and, of course, their child, about appropriate remediation and accommodation strategies. They are sometimes their child's tutor which takes a considerable amount of time – researching, preparing and delivering the selected program – and which can lead to arguments and additional stress.

Education is a lengthy process and children spend a great deal of both their childhood and their adolescence in the classroom. If they are not making progress and are feeling unhappy and frustrated, it can feel like a very long journey.

Most parents indicate that they simply want the school and classroom teachers to acknowledge the difficulties their child is experiencing and to look at ways these difficulties can be addressed. They consider it to be vitally important that children with learning disabilities are given the opportunity to achieve in line with their potential and they are ensured access to the curriculum at all times.

The DSF resource 'Understanding Learning Difficulties: A practical guide – Revised Edition' has been designed for Australian teachers, principals and others working in the school system. It contains a wealth of information for classroom teachers and outlines a range of effective, evidence-based strategies that are known to assist students with learning disabilities. Parents may wish to refer schools to the resource for guidance.

Helping to improve the learning outcomes of all children

In addition to developing a stronger awareness of the teaching strategies known to target specific areas of learning, there are a number of strategies that can help improve learning outcomes more generally. These strategies can be used by parents to support their children at home but are also of value to the classroom teacher. A table outlining these eight strategies appears on the following pages.

Strategy	How to implement	Example of Resources/Approaches
High expectations	■ Express a belief that all children can improve their academic levels ■ Encourage and support your child to set high personal learning goals ■ Maintain an expectation that your child can achieve in line with their potential ■ Help your child to use appropriate resources or assistive technology that will allow them to access the same material as their peers	■ Find ways to adjust homework or set tasks so they are in a format your child can use e.g. read out written questions, scan instructions and use text reading software on the computer, find audio versions of text books, re-write questions in simplified text. ■ Discuss goals with your child in advance, making expectations clear ■ Ensure your child is aware of the steps required to achieve goals ■ Break homework tasks and assignments down into smaller steps and provide feedback along the way to ensure success
Ensure access to curriculum	■ Talk to your child's teacher about classroom strategies and adjustments that will allow your child to participate and learn ■ Follow up with your child and their teacher to ensure adjustments are being used and are actually assisting your child to engage with the curriculum and are minimising any barriers to learning	■ Alternative methods to access curriculum content, such as e-books, video, assistive technology (voice to text/ text to voice software) used at home and at school ■ Additional time to access material or complete an examination or assessment task ■ Request summaries of teaching content, and glossaries of new terms that you can discuss with your child ■ Assist your child to request an alternative task if the format of the task does not allow them to demonstrate their skills and knowledge
Reduce task into small 'chunks'	■ Encourage your child to focus on one subject at a time when completing homework ■ Break down homework tasks into small clear achievable steps that can be checked off as they are completed ■ If your child is practising a new skill, assist them with working through the task in a step-by-step basis and ensure each step is mastered before the next step is introduced ■ If possible, provide immediate corrective feedback and reinforcement as your child completes their homework	■ Demonstrate or model the steps required to complete a homework task ■ Find one of your child's friends that is competent with subjects your student finds hard to act as a homework buddy ■ Request that the teacher provide an example of the finished piece of work so that expectations are clear ■ Ask your child to complete smaller "chunks" that build together to complete the larger task
Teach to mastery	■ Monitor your child's ability to complete their homework independently and ensure they are able to 'master' the set task	■ Alert the teacher if your child is struggling to learn or remember the skills being sent home for homework ■ Ensure your child is receiving explicit, structured, cumulative programs at both a whole-class and small group/one-to-one level (see page 18 for examples)

Strategy	How to implement	Example of Resources/Approaches
Support/ scaffolding	■ If your child is learning new skills at school, try to provide scaffolds and support to assist their learning and then gradually withdraw the supports as they become more competent ■ The provision of scaffolds and support will assist your child to achieve their learning goals and reduces anxiety	■ Modelling the steps required to complete a task ■ Cue cards, checklists, concept maps and writing templates/guides ■ Request a model of the completed task against which your child can compare their own work ■ Use of assistive technology (e.g., electronic spellchecker, literacy software programs)
Two way feedback	■ Ask the teacher to provide regular and targeted feedback alongside the practice of key skills and concepts ■ Feedback should provide information to help your child to develop their skills ■ Feedback should be given at a time and frequency that allows it to be useful (e.g., immediately following completion of a task) ■ Check for understanding by asking your child to explain what they have learnt after completing their homework ■ Ask your child about their set homework – did they learn anything from doing it? What could be done differently to help them complete the task?	■ Request teachers provide detailed written feedback on assignments, projects, tests ■ Ask teachers for a marking grid that offers specific feedback against a pre-determined criteria ■ Provide positive feedback on things your child was able to do successfully and offer feedback outlining specific ways in which they could improve their performance next time ■ Ask your child how they feel they performed
Revisit/repeat/ reinforce	■ Repeatedly use visual and verbal strategies concurrently to teach new concepts and skills ■ Assist your child to highlight key words, statements, concepts and instructions in their homework to reinforce what they need to do ■ Talk about previous homework tasks that may assist your child to learn and understand new material ■ Understand that the more curriculum material is revisited, repeated, and reinforced, the stronger the neural connections to this knowledge become and the more easily accessible it is	■ Try to explain homework tasks using a different methods such as visuals, hands-on materials, and verbal explanations if your child does not understand, or request that the teacher provide an alternative format ■ Ask your child to summarise what they have learnt or to repeat directions or procedures ■ Stop and check your child understands what they are required to do for their homework as they work through it
Differentiate assessment	■ Ask that teachers make adjustments and modifications to assessment tasks for your child to cater for their specific learning needs	■ Ensure your child is provided with alternative modes of assessment or extra time on examinations to read and analyse questions, organise thoughts, plan answers, and sequence material

Effective communication between home and school

Whether your child has been diagnosed with a specific learning disorder or is displaying learning difficulties at school, it is important that parents and teachers keep the lines of communication open to ensure the best outcomes for each student. Good communication is the responsibility of both parents and teachers. Parents can be active in this process by keeping teachers informed as well as seeking information about their child's progress in the classroom.

Parents can assist in the communication process by:

- Informing the teacher about their child's difficulties and strategies that have been found to be effective;
- Becoming an active participant in the student's education;
- Offering the teacher support in whatever way works best for him/her;
- Always making an appointment when you want to discuss something regarding the student;
- Working in partnership with the teacher;
- Adopting a collaborative problem-solving style approach.

It is always appropriate to ask questions about the student's progress at school including questions about their academic progress, homework, general behaviour, and social-emotional well-being. However, it is important to carefully choose a time to ask these questions. Often the best approach is to ask the teacher when the most appropriate time would be or to set up a formal meeting. When informing the teacher/s about the student's learning disability or difficulties, it is useful to give them information about the student in a brief format, which may include a verbal discussion followed up with an email or a summary page outlining key pieces of information. Sometimes just handing over the student's assessment report can be impractical as a teacher has limited time to sit and read through a lengthy document. As briefly as possible, you should let the student's teacher know:

- Any of the student's formal assessment results that may affect their learning;
- Interventions, therapy or tutoring that has been done in the past or that is currently happening;
- Any important family or life events that may affect the student's learning in the classroom;
- Important medical information;
- The student's strengths and areas of interest. These can sometimes be used to engage the student in activities;
- The student's specific areas of difficulty and activities in which he/she may need support;
- Strategies that you think work for your child or that a previous teacher, tutor or therapist has indicated works well in the classroom;
- Any upcoming appointments that will occur during school time.

This information will be particularly important if the student is changing schools, starting a new school year with a different teacher, or when there has been a recent assessment or change in the student's situation that the teacher should be informed about. Having this information on hand can also be useful if a relief teacher takes the class.

Who to talk to?

If you feel your child is experiencing difficulties in the classroom or is not getting the support they need, it is always best to go directly to your child's teacher first with the aim of working together to come up with a solution that will work for you, the teacher, and most importantly, your child. It may also be beneficial to ask the teacher who supports them within the school and suggest arranging a meeting with those additional staff. These people may include the School Psychologist, the Deputy Principal or Principal, the Year Coordinator (Secondary School), a Learning Support/SAER Coordinator, a literacy or numeracy support teacher, and other teachers.

The rights of students with learning disabilities in the education system

In Australian schools, students diagnosed with a specific learning disability, such as dyslexia, are not eligible for any individual government funding or allocated teacher assistant time. Only general school based funding is provided to the school and therefore it is up to the school how they use the resources/funding they currently have available to them to support students with a learning disability.

However, students adversely affected by learning disabilities are entitled under the Disability Discrimination Act, 1992 (DDA) to both a differentiated curricula and differentiated assessment. The aim of the DDA is to ensure that all students are provided with access to the curriculum and are given the opportunity to demonstrate their skills, knowledge and understandings, on the same basis as their peers. The Australian Disability Standards for Education (2005) provides guidance to teachers, school administrators and parents on their rights and responsibilities with respect to the DDA.

In general, all education providers must comply with the DDA and Disability Standards for Education. The Standards give students and prospective students with a disability the right to education and training opportunities on the same basis as students without a disability. Education providers have an obligation to make changes to reasonably accommodate the needs of a student with a disability. Under the DDA, "disability" includes those conditions that result in a person learning differently from other people. This is legally recognised as applying to students with diagnosed learning disabilities.

Under the Disability Standards for Education, education providers are required to:

- Make **reasonable adjustments** to assist a student with a learning disability to participate in education on the same basis as other students;
- **Consult** with relevant people in order to understand the impact of a student's learning disability and to determine whether any adjustments or changes are needed to assist the student; and,
- Develop and implement strategies to **eliminate discrimination** of people with learning disabilities.

Reasonable adjustments may include classroom accommodations which are:

- Adaptations and modifications of classroom practices (teaching approach, materials used, speed of delivery, method of teaching and the use of assistive technology);
- Strategies that do not reduce educational standards and requirements; and,
- The use of alternative assessment procedures which take into account students' needs.

Without accommodations, students will not be able to access the curriculum and will consequently learn less than their peers, they will not be able to demonstrate their skills and understandings and they are more likely to experience a high level of frustration and anxiety; reducing their chances of learning even further.

It is important to note that education providers, such as schools, are required only to make reasonable adjustments, which are considered appropriate if it takes into account the student's learning needs while balancing the interests of all parties affected, including those of the student with the disability, the education provider, staff and other students. In other words, education providers are exempted from making adjustments that would impose unjustifiable hardship on them such as significant financial costs.

A copy of the Disability Standards for Education 2005 and a selection of fact sheets that provide information to assist students, parents and schools to understand the Standards and ensure that students with disability can access and participate in school education are available at https://education.gov.au/disability-standards-education.

What to look for in the school setting

In Western Australia, different schools cater to children with learning difficulties and learning disabilities in different ways. All students should be catered for appropriately, but unfortunately, this is not always the case. Although this results in parents sometimes looking at alternative schools for their child, not all parents are in a position to 'choose' the school their child attends. They may live in a regional or remote community or simply not be able to select a school that is out of their local area.

Ideally, students with learning disabilities should be in a school that has clearly articulated policies and practices in place, demonstrating the school's commitment to supporting students with learning disabilities. Principals and teachers should be able to explain these policies and practices to parents and outline how they will be used to meet the specific needs of their child.

In some overseas countries there are schools that specifically cater for students with learning disabilities and others that are assessed as being 'learning disability-friendly'. There are no designated schools purely catering for students with learning disabilities in Australia and no widely-accepted model of 'LD-friendly' accreditation. There are, however, many schools that do create a very inclusive environment and could be described as learning-disability friendly.

These schools are essentially school communities that welcome, value and include all students, regardless of their level of ability or capacity to engage with the school curriculum.

These schools ensure that they have appropriate policies and practices in place that result in all students being able to participate on the same basis as their peers, and that enable all staff members to feel confident and well-prepared in their endeavours to successfully support students affected by learning disabilities.

A school could be considered learning-disability friendly if it aims to:

- Recognise the effect of learning disabilities on student achievement and wellbeing;
- Actively improve the support of students with learning disabilities within the school;
- Value the professional knowledge of teachers and support staff through a commitment to the provision of ongoing professional learning opportunities in the areas of learning disability and literacy;
- Develop policies and practices to ensure that students with learning disabilities receive high quality teaching and appropriate intervention and accommodation;
- Implement and ensure adherence to such policies;
- Recognise that, within the LD friendly school, everyone has a role. These roles must be resourced and supported appropriately.

Explaining a specific learning disorder diagnosis to your child

Deciding when and how to explain a specific learning disorder diagnosis to a child is very much a parent's choice, but is often influenced by the child's age. The reality is that most children are aware, even from quite a young age, that they are struggling at school and that something is 'not right'. Sadly a significant number of children believe that the reason they are having trouble learning is because they are 'not very smart' or even 'stupid' and they may be experiencing feelings of low self-esteem as a result. Many children are relieved to have a way to explain their difficulties and to learn that the problems they are experiencing have nothing to do with low intelligence or lack of effort.

Many families prefer to use the terms dyslexia, dysgraphia or dyscalculia when they talk to their child. This is generally when children reach an age where they can understand the concept and want an explanation for their difficulties.

As discussed in the self esteem section of this Guide (see page 41), parents can help reduce the chances of a child with a learning disability experiencing low self-esteem by helping their child understand the nature of his/her learning disability. The research suggests that a critical factor in overcoming the risk of low self-esteem or mental health issues in children and adults with learning disabilities appears to be **self-understanding, acceptance and a feeling of control over one's life.** Self-understanding includes having enough awareness of one's own strengths and weaknesses to be able to think of, or find, other strategies to compensate for a learning disability. Individuals who have a greater understanding of their area of difficulty are better able to make decisions and problem solve when they are faced with a task that they know they will find challenging. As a consequence they are more likely to seek help when needed, or find an alternative strategy.

As previously mentioned, deciding when to discuss a specific learning disorder diagnosis is often influenced by a child's age. For a young child, it may be useful to focus on their need to be taught to read (or spell, or write etc.) using a different approach to others rather than using the term "learning disability". For an older child, providing clear and factual information about their learning disability is important along with discussing strategies that may assist them. There are also many children's books available that share stories about different characters with various learning difficulties or that explain learning disabilities in child friendly terms. For example, 'It's Called Dyslexia' by Jennifer Moore-Malinos, 'My Dyslexia Journey' by Hamish or the Hank Zipzer series of stories about a boy with dyslexia written by Henry Winkler and Lin Oliver. All of these books are available through DSF Literacy and Clinical Services.

Is a learning disability a gift?

There are times when people choose to talk about learning disabilities as an advantage, because of the particular strengths that an individual with a learning disability has, in comparison to someone without a learning disability. The suggestion is that individuals with a learning disability: view the world differently; process information differently; and, use their brain in different ways to people without a learning disability.

The evidence suggests that learning disabilities do not, in fact, provide students with unique gifts. It seems more likely that every individual with a specific learning disability is different and that there are no identifiable common areas of strength. There are certainly common areas of difficulty, and many individuals with learning disabilities do have unique strengths and talents, but not to the extent that an observable pattern can be identified.

Some students with learning disabilities display strong skills in the visual or performing arts, or the sporting arena, as do many students without learning disabilities. At the same time, there are many individuals with learning disabilities who struggle in the arts and sport, but enjoy and excel in another area. Essentially, students with learning disabilities display a range of strengths and weaknesses in the same way that students without learning disabilities do.

There is, however, some evidence to suggest that students with learning disabilities often develop a high capacity for persistence – possibly as a result of having to work so hard in the early years to achieve academically. When they discover an area that is not as difficult for them (e.g. art v/s reading) they are likely to enjoy it more, find it easier to achieve in, and perhaps view it as an area of strength. They may choose to focus on the area, receive ongoing positive feedback (particularly in comparison to their area of difficulty) and gradually develop a higher level of skill and knowledge in the area than many of their peers.

Having an area of strength (or several areas) is important as students should not be defined by their learning disability and should feel confident and positive about their many talents and skills.

A summary: Supporting students with learning disabilities – the important role of parents.

Parents can:

- Support their child and their child's teacher by using effective strategies for homework and school achievement;
- Help to develop an Individualised Education Plan;
- Keep the lines of communication open between school and home and work collaboratively with classroom teachers;
- Advocate for their child by being aware of reasonable adjustments and accommodations in the classroom; and,
- Help their child to understand what a learning disability means.

Children with learning disabilities may have low self-esteem

Children with learning difficulties and disabilities are often faced with many daily struggles at school as they attempt to deal with various challenges they face as part of their learning difficulty. Evidence suggests that children with learning disabilities are at greater risk of having a poor sense of academic self-concept as this is the area in which they experience the most difficulty. That is, children with learning disabilities may hold beliefs about their academic self which are directly linked to their academic results or performance in class, such as "I am no good at reading", "I can't spell", or worse, "I am stupid".

It is important to note that a child can hold very different beliefs across the various areas of self-concept, some positive, some negative, but it is the degree of importance they place on each area that will influence their overall self-esteem. Here are some examples that may be true for a child with a learning disability:

1. I struggle to read fluently and often stumble over words. I can't spell or write well. Reading and spelling are important to me. My self-esteem is likely to be affected negatively.
2. I am an extremely competent artist and have an amazing ability with drawing life-like sketches of people. My drawings are admired by others and are often placed on the walls of the school and my home. Drawing is of importance to me, therefore my self-esteem is likely to be affected positively.
3. I am useless at sports. I can't kick a ball very far, my throwing is pretty average and I have difficulty in many physical activities. Sport is not important to me; I am happy just to muck around and have fun rather than score a goal. My self-esteem is not affected at all.
4. I struggle to get my thoughts down on paper and my writing is very poor. Writing is important to me and I recognise that it is an important skill. Additionally, I am also really bad at music. I admire musicians and being able to play a musical instrument well is important to me. I no longer want to go to school, and my self-esteem is negatively affected.

Sometimes, by encouraging and highlighting a child's areas of strength, we are able to partially counteract the negative impact of their learning problems. It is important to monitor children who are experiencing difficulties in multiple areas, as they are often at heightened risk of experiencing low self-esteem.

Recognising and supporting children with low self-esteem

Many children with learning disabilities do not develop low self-esteem, and many of those who do experience low self-esteem as a child or adolescent, are able to persevere and find success as an adult. These successful individuals are found to be aware of their learning disability but not defined by it, proactive in seeking support, able to set clear goals, capable of learning how to cope with frustration, able to show perseverance, and are flexible when approaching obstacles and problems. They also often show strength in a skill outside of the academic area in which they struggle.

There are many ways that parents can help to develop positive feelings of self-esteem in their children:

- **Help your child feel special and appreciated.** One of the main factors shown to contribute to a child becoming resilient is the presence of at least one adult who helps the child feel special and appreciated. Spending one-on-one time with a child each week helps them feel loved and gives them an opportunity to relax and display his/her strengths.
- **Help your child to develop problem-solving and decision-making skills.** High self-esteem is associated with strong problem-solving skills. We often give children the solutions in an attempt to help them. However, it is important to show children how to solve problems by modelling and role playing the process of problem solving and by giving them the opportunity to come up with different solutions to fix difficult situations they may face.

- **Avoid comments that are judgmental.** Children are more likely to take on suggestions if they are cast as strategies that must be changed rather than as something wrong with their motivation. For example "We need to work out better strategies to help you learn" rather than "You have to try harder".
- **Be an empathetic parent.** See the world through your child's eyes. If your child is having difficulty with learning, it is best to show that you know they are having difficulty, to cast the difficulty into a problem to be solved and to work together to think about possible solutions.
- **Provide choices for your child.** Providing choices minimises the possibility of conflict but also gives your child a sense of control over their own life when for much of the time they may feel they have little control.
- **Do not compare to siblings.** It is important not to compare siblings but rather to highlight the individual strengths of each member of the family.
- **Highlight your child's strengths.** Often children with a learning disability view themselves in a negative way, particularly in relation to school. Making a list of a child's areas of strength and finding ways to reinforce and acknowledge them is important. A sense of accomplishment and pride gives students the confidence to persevere in the face of challenges.
- **Provide children with opportunities to help.** Evidence suggests that helping others has a positive impact on mental health. Providing opportunities for children to contribute in the home or in school communicates to them that they have something to offer their world. It can also be a good way to display a child's areas of strength.
- **Have realistic expectations and goals for your child.** By being realistic in your expectations for your child, you provide the child with a sense of control.
- **Help your child understand the nature of his/her learning disability.** Often children with learning disabilities have misconceptions about their learning problems that only add to their distress and negative view of themselves. Having realistic information about their learning disability and their strengths and difficulties helps them feel that things can be done to help the situation.

Many of these tips were identified by the Coordinated Campaign for Learning Disabilities and can be found on the LD Online website: http://www.ldonline.org/article/tips_for_developing_healthy_self-esteem_in_your_child

When is low self-esteem of concern?

While not all children with a specific learning disorder will have low self-esteem, there is evidence that these children may be at greater risk. It is also apparent that children who experience low self-esteem for a long period of time may develop mental health issues such as anxiety and depression. If there is a mental health problem present alongside a learning disability, this needs to be addressed, both for the child's wellbeing and to improve the effectiveness of remediation attempts. Therefore, it is important for parents to be aware of any long-lasting changes in the child's behaviour which may indicate they have a low self-esteem or mental health issue which requires support from a Psychologist or therapist. Below is a list of possible factors to look out for. Many children will show one or two of these behaviours for short periods throughout their schooling as they attempt to cope with normal life demands. However, if a child displays a number of these behaviours over an extended period of time, then it may be time to consider professional help.

- A sudden change in their performance – they write or read less, do fewer sums, or complete fewer assignments; the quality of their work deteriorates; they make careless errors;
- A change in their social behaviour – they distance themselves from their brothers or sisters, friends, or parents and develop a belief that 'no one likes me';
- A change in communication – they begin to use more aggressive communication such as put down statements directed at siblings, parents and or teachers;
- A change in emotionality – they display more temper tantrums, mood-swings, inappropriate crying, and/or baby-like behaviours;
- Inappropriate diet – if their low self-esteem is related to physical image they may begin to eat more or less; and,
- A change in sleep patterns – their anxieties, frustrations, and uncertainties may come to the surface when they go to bed which interferes with their sleep.

If you feel the child requires extra support to develop their self-esteem or emotional well-being, a good place to start is to speak to your family doctor (GP) or the School Psychologist. They should be able to refer you to a Psychologist, and your GP may be able to refer you for discounted sessions with a Clinical Psychologist through a mental health care plan. You can also give the child options for seeking their own support such as through:

- **KidsHelpLine:** 1800 55 1800
  A confidential, telephone and online counselling service specifically for young people aged between 5 and 25 years.
- **Headspace:** 1800 650 890, Website: https://www.eheadspace.org.au
  Provides online and telephone support and counselling to young people aged 12 to 25 years.
- **Reach Out:** au.reachout.com
  A web-based service that provides young people, their families and carers, with the information, tools, skills and connections they need to make positive decisions about their mental health and wellbeing.
- **Youth beyondblue:** http://www.youthbeyondblue.com
  Provides information and resources relating to mental health problems such as depression and anxiety.
- **Black Dog Institute (youth):** http://www.biteback.org.au
  BITE BACK is a new and evolving website which aims to improve the wellbeing and mental fitness of young people, based on the principles of positive psychology – the science of optimal functioning.

Appendices

Appendix 1

Processing Weaknesses are Common in Children with Learning Disabilities

Children with learning disabilities generally have difficulties processing information accurately and automatically, and as a result tend to make more mistakes or take longer to complete tasks than children without learning disabilities. Many children with a learning disability also have a weakness in working memory, and students with an SLD with impairment in reading and/or written expression tend to have difficulties processing speech (phonological processing) and they may also struggle to process and recall the letter patterns used in written language (orthographic processing).

What is working memory?

Working memory is the ability to hold information in your mind and manipulate it as necessary for a brief period. It is a person's mental workspace. A child's working memory capacity depends on their age and innate abilities. Young children are only able to hold, manipulate and recall a small number of items or 'chunks' of information (e.g. two or three items) whereas older children can deal with more (e.g. four or five items). No matter what the age, there will be some children with larger working memory capacities than others.

Working memory is important for a number of day to day activities including a high proportion of tasks in the classroom, such as remembering multi-step instructions, recalling details from a spoken passage or story and performing mental maths sums. While it is resistant to change, there are a number of strategies and accommodations that can be made to support a child with poor working memory both at home and at school.

What is phonological processing?:

Phonological processing comprises three areas of functioning:

1. **Phonological and Phonemic Awareness** – how we perceive and work with the sounds (phonemes) in words. This includes rhyming, working with syllables and isolating individual sounds. The ability to work with syllables, and to blend and segment phonemes in words, is critical to the development of good reading and spelling skills. Students need to learn that the sounds they are making when they speak relate directly to the letters they use when reading and writing. Essentially, we blend to read (e.g. the sounds /sh/ /o/ /p/ form the word shop) and we segment to spell (e.g. "How many phonemes in block?" - four: /b/ /l/ /o/ /ck/).
2. **Phonological Memory** – the ability to hold on to speech-based information in short-term memory. We rely heavily on our phonological memory when reading and spelling as we need to be able to hold the sounds in words in order to blend and segment those sounds accurately.
3. **Rapid Automatised Naming** – the ability to retrieve words quickly and easily from long term memory. Children with a weakness in this area tend to have difficulties in reading and writing fluently which often become apparent later in a child's education.

Students who have a weakness in one or more of these areas are likely to experience literacy-learning difficulties.

What is orthographic processing?

Becoming a fluent reader requires both the capacity to utilise sound-based decoding strategies ('sounding out') and the ability to accurately recognise familiar letter patterns either as whole words (e.g. 'was') or within words (e.g. the 'igh' in night). The ability to rely less heavily on sound-based decoding strategies is very much dependent on the development of orthographic processing.

Orthography refers to the conventional writing system of any given language and includes rules around letter order and combinations as well as capitalisation, hyphenation and punctuation. Orthographic processing is the ability to understand and recognise these writing conventions as well as recognising when words contain correct and incorrect spellings.

Children with weak orthographic processing rely very heavily on sounding out common words that should be in memory, leading to a choppy and laborious style of decoding. Delays in orthographic processing are also linked to ongoing difficulties in letter recognition and letter reversals. If the shape and orientation of a letter is not fully consolidated and stored in visual memory, then a child is more likely to make reversal errors and be unable to recognise when they have made a mistake.

As skilled readers need to recognise words and/or components of words automatically, there is a heavy reliance on orthographic processing in the development of reading fluency. Delays in this area are likely to inhibit a child's applied reading skills and ultimately affect his/her reading comprehension skills.

In addition, poor orthographic processing will almost certainly result in both a high rate of spelling errors and poor written expression. Children find it difficult to remember the correct spelling pattern for a particular word and don't seem to benefit from the editing tool, "Does it look right?". Rather they demonstrate the tendency to over-rely on phonological information, writing words like 'rough' as 'ruff' and 'night' as 'nite'.

Appendix 2

A Parent's Guide to IEPs

What is an IEP?

An IEP (Individual Education Plan) is a written plan to describe how the delivery of the school curriculum is going to be adapted and modified to meet the educational needs of a particular student. These plans can also be referred to as Individual Learning Plans, Curriculum Adjustment Plans or Documented Plans.

The plan may be developed by a team of people including the parent/guardian, the teacher, support personnel and, where appropriate, the child. There is no one correct format for IEPs and each one will be different, but it should be clear and easily understood by everyone involved.

It is an "Action Plan" for the student's educational needs and it should state very clearly:

- Immediate goals and the time frame involved;
- Content of the program or approach undertaken;
- How assessment will be made and progress monitored;
- Time and frequency of reviews; and,
- Who will be responsible for implementation and coordination.

It is a plan, rather than a program. The fact that an IEP exists does not necessarily mean that appropriate intervention is happening and it may require following up by the parent from time to time.

Parents should ask to be involved in the development and reviews of IEPs that are developed for their child.

The Parent's Role

Parents can:

- Help the school staff better understand their child;
- Show an interest in their child's learning; and,
- Show willingness to be part of the support team.

Meetings with school staff can be daunting for some parents and it is best to attend meetings well-prepared.

Before the meeting

Parents can:

- Make a list of their child's strengths and weaknesses;
- Gather together any past information that might be helpful;
- Give some thought to the kind of goals they would like their child to reach;
- Make a list of the questions they would like answered; and,
- Consider how they will be able to help at home.

At the meeting

Parents can:

- Contribute to the discussion;
- Clarify anything they do not understand – educational jargon can be confusing and it is essential that parents ask for an explanation if something is not clear;
- Listen for the details of long and short term goals or targets that will be set, specific strategies, individual responsibilities, resources and time frames;
- Approach the discussion in a "problem solving" way. Parents are part of a team with their child's best interests at heart. It is important to evaluate the best way that everyone can help. It is also important that parents remain positive and look for solutions;
- Make notes – in particular, they can be sure that they have the review date clear.

After the meeting

Parents can:

- Review the notes;
- Ask if they have understood the goals, what is actually going to be done in or out of school time, who is going to do it and the parent's role in the program;
- When they get a written copy of the IEP, check that the written version of the IEP is consistent with their understandings and notes;
- Communicate regularly with the classroom teacher;
- Write a quick note or have a word immediately with a teacher if a problem arises. This should happen before things escalate or get overlooked;
- Ensure they do what they agreed to do;
- Be prepared for the review meeting with their feedback.

Appendix 3

Structured Synthetic Phonics: A Guide for Teachers and Parents

Learning to read is essentially learning a code. The letters we use are simply symbols or written code for the speech sounds of English. Learning about the relationship between the letters of the alphabet and the speech sounds they represent allows us to "crack the code" and learn to both read (decode) and spell (encode).

Synthetic Phonics is a way of teaching children to read. It has been identified both here and overseas as the most successful approach to the teaching of reading and spelling. The 'synthetic' component reflects the practice of 'synthesising', or blending together. The 'phonic' part reflects the process of linking individual speech sounds (phonemes) to written symbols (graphemes). Essentially, when a child learns to read using Synthetic Phonics they learn to link letters to speech sounds and then blend these sounds together to read words. They also learn to separate (segment) words into their constituent sounds and link these sounds to letters in order to spell them.

The term 'Synthetic Phonics' began to be widely used after the publication of a study carried out in Clackmannanshire, in Scotland. Researchers from St Andrew's University found that one method of learning to read produced much better results than the other methods they looked at. This method was called Synthetic Phonics. This success has since been replicated in numerous studies world-wide.

Why is it important to focus on the sounds?

It is important to know both the sounds and the letter names when learning to read. Those children who know most of the letter names and their corresponding sounds by the end of pre-primary are far more likely to do well in literacy-based tasks (reading, spelling, written expression) throughout their schooling than those students who know very few.

When we say the alphabet we tend to use letter names – Ay, Bee, Cee etc. When we read or spell a word (decode or encode) it is important to know the speech sound that the letters are representing, for example the speech sounds /k/, /a/, /t/ blend together to make the word "cat" - not /Cee/, /Ay/, /Tee/.

Which sounds should children learn?

It is generally agreed that there are about 44 sounds that make up words in the English language. Given that there are only 26 letters in the alphabet we need to combine some letters to represent the remaining speech sounds.

In a number of cases, two letters (or sometimes three) are put together to represent a specific sound, such as 's' and a 'h' representing the /sh/ sound (as in **sh**ip) or 't', 'c' and 'h' representing the /ch/ sound (as in ma**tch**). When two letters are used to represent a specific sound it is called a 'digraph'. Vowel sounds are particularly important as there is a vowel sound in every syllable of spoken English. Of the 44 speech sounds in English, 19 are vowel sounds.

What does Synthetic Phonics actually mean?

In a program using a synthetic phonics approach, children start by learning about the sounds within spoken words. They need to be able to: hear that sentences are made up of words; that some words rhyme; that some words start (or finish) with the same sound; and, that words are made of speech sounds that are blended (synthesised) together. As part of learning about the different sounds we use to make words, children should be taught about the letter (or letters) we use to write the sound down. For example, if children are learning about the /s/ sound through matching games, rhyming, alliteration (the slimy, slithery snake slid slowly somewhere special) and other oral language activities, it is important to explicitly link the sound with the letter we use to write the sound down.

When introducing the letter we use to write the /s/ sound down a teacher might write or display the letter 's' and say "we use this letter to write down the /s/ sound. The name of this letter is "ess". Children learn letter representations for each of the 44 sounds of English. When they see a letter or digraph they should be able to say its sound. They then learn to blend (put together) these sounds to make words. Once they can do this they are reading words.

There are numerous 'Synthetic Phonic' programs available and they all have more or less the same set of sounds. There are a few small differences. Each program has its own order for introducing the sounds, but evidence suggests that as long as all the sounds are covered, the order doesn't seem to matter. Generally programs introduce commonly used consonants and short vowel sounds first, followed by long vowels, digraphs, adjacent consonants and r-controlled vowel sounds (such as /er/ and /or/). Children learn one way of writing down each of the sounds and are then gradually introduced to spelling alternatives for each of the sounds. Sometimes they are still learning about the more complex spelling alternatives in upper primary or even secondary school. For example, we first learn that the /s/ sound is written down using the letter 's' (as in sun). Later we learn that we can write the /s/ sound using the letter 'c' (as in city) or 'sc' (as in science), and later still we learn that we can write down the /s/ sound using the letters 'ps' (as in psychic) or 'st' (as in listen).

What material should children learning to read be given?

One of the most important principles of Synthetic Phonics is that a child should never be asked to read something that is too difficult for them, or that they do not have the skills to read. Within the first few sessions of synthetic phonics children should be able to read words made up of the sound / letter relationships they have learnt. For example, if the first six letters of a structured synthetic program are 's', 'i', 't', 'm', 'a' and 'p', children can read it, at, mat, sat, sit, pit, tip, tap, pat etc. Start with small regular words. Regular words are words where the sound / letter relationships are the ones the child has been taught. These small regular words are often referred to as 'cvc' words. The term 'cvc' means consonant, vowel, consonant - words like cat, dog, leg, pin, bus. Once children can read these they then move on to reading longer words, like cobweb, and words with digraphs, like ship.

Why is there a problem with more advanced reading material?

If a child is asked to read something containing words that are too difficult for them they start to simply guess the words. They use the pictures on the page or the first one or two letters and this becomes their reading strategy. It might work for the first year or two but it is not an effective reading strategy in the long term. It can become very frustrating, and the child begins to believe that reading is too difficult for them. Strong fluent readers become very proficient at decoding words very quickly. They do not rely on pictures, context or guessing as their primary strategy.

What books are suitable?

It is important to read books based on Synthetic Phonics. That is, the books should be linked to the same sequence of sound / letter relationships that the teacher is using in the classroom. Initially the books may only include 6 letters (for example 's', 'i', 't', 'm', 'a' and 'p') plus one or two high frequency words (for example, 'I', 'was'). As the child develops a greater knowledge of the sound / letter relationships the books he or she reads will include these new letters and digraphs. Once they know their sounds, your child can have a go at reading any small regular words in books when they are practising their reading.

There are many synthetic phonics reading series. Two of the series recommended by DSF include: the Dandelion Readers series and the Read Write Inc Phonics series. Both of these series follow a very structured, systematic introduction of new sounds and letters, in reading books that are both appealing and entertaining.

How quickly should children progress through a synthetic phonics program?

Children should be introduced to new concepts gradually and their knowledge built up a step at a time. However the whole point of learning the sounds is to use them to read and write, so they need to be covered quite quickly. Most children are able to learn the sounds at the rate of three or even four a week. It is anticipated that students will be introduced to a structured synthetic phonics program in pre-primary and be able to read and write simple sentences by the end of the year.

What should I do if a child cannot learn the sounds that quickly?

Some children do take longer than others. It is no use trying to teach new sounds if they are unable to master the ones they have already been introduced to. Revisit the sound / letter (phoneme / grapheme) relationships the child does know and then add new sounds gradually, at a pace that he or she can cope with.

It is important to remember that English is not a completely regular language. There are well over 600,000 words in the Oxford English Dictionary and the majority of these have been taken directly from other languages: Latin, French, Greek, to name a few. Although they have been absorbed into English, the words have retained much of their original spelling. This is why English takes so much longer to learn than many other alphabetic languages and explains why there are so many spelling alternatives for some of the speech sounds. It is important to remember that it is not, however, a completely irregular language, and it is far easier to learn and recognise the patterns that are there, than it is to try and remember every word individually.

Is it just for reading?

A Synthetic Phonics approach should also benefit spelling and writing. As well as putting together the sounds to read words, the children should be taught to listen for the sounds in words so that they can spell them. If they can hear the sounds in a word and know the letter/s that we use to write down the sounds, then they can have a go at writing the word.

Does this mean children taught using a synthetic phonics approach will spell phonetically?

As with reading, children need to build up their knowledge of spelling gradually. To begin with, they will have learnt one way of writing a sound, so for example the sound /ee/ is learnt as two 'e' letters. Children just starting out will write the 'ee' spelling whenever they hear the /ee/ sound, for example they might write 'eet' instead of 'eat'.

As the other alternatives are introduced to the children, and they develop a knowledge of word families, their spelling will improve. Also as children read more, and see the words in their reading, they begin to learn and recognise which way words are spelt.

Why is this approach more successful?

Children taught by Synthetic Phonics are being taught the code by which reading and writing work. This means they are being given the tools they will need to become independent readers and writers. If they do not understand how words are put together, and how to go about breaking the code so they can read a word, any unknown word is a mystery.

They might be able to think it looks like another word they know (although this is quite a complicated thought process that small children find very difficult, and of course they might be totally wrong). They might be able to guess the meaning of the word from the context of the other words about it, but they have no way of decoding the word if they do not have this phonic knowledge. Good readers rarely guess using context clues, poor readers try to guess from the context (or pictures) frequently. Good readers don't need to rely as much on context clues because their decoding skills are so strong.

Guessing from context is frequently unsuccessful, time consuming and reduces fluency. It has been estimated that only one out of every four words within a passage can be predicted using context cues and that only about 10% of content words can be predicted using this strategy – generally students need to be able to decode these words in order to make sense of what they are reading.

Poor readers also tend to rely on initial consonant cues, guessing the word on the basis of the first one or two letters.

Will synthetic phonics help children who have a specific learning disorder or are having trouble learning to read?

Children find it difficult to learn to read for a number of reasons. For the majority of children a structured program that includes systematic synthetic phonics and the concurrent use of visual and verbal strategies to teach new concepts and skills will prove successful. Some children do, however, have an inherent processing difficulty (often phonological in nature) that results in them finding learning to read and spell extremely difficult. They may have poor memory skills, making it difficult for them to remember what they are taught. They may have great difficulty segmenting words into individual speech sounds, making it difficult to link phonemes (speech sounds) to graphemes (letters). These children will find it difficult whatever method is used. Synthetic Phonics, taught in a systematic way, is the approach most likely to result in successful outcomes.

Children with a specific learning disorder with impairment in reading stand out as their reading ability does not match with their abilities in other ways. Reading can be a slow and frustrating journey but because the system is logical and goes forward step by step they are usually successful using a Synthetic Phonics approach.

Good Readers and Synthetic Phonics.

Synthetic phonics instruction is particularly beneficial for children at risk of learning difficulties or who are suspected of having a learning disability.

However, research also demonstrates that all children benefit from phonics instruction, learning to read and write at a faster rate than they would without phonics. It is also the case that some children, who have been taught to read using other methods, seem at first to be making good progress but then seem to stumble. Frequently, these children have relied on visual-memory strategies and to begin with they learn the words quickly by memorising them as whole words. As they progress though, the number of words they need to know increases, and eventually they slow down (usually around Year 2 or 3). They then find it difficult to move forward. These children have to be taught the code if they are to continue to make good progress with their reading, and cope with more difficult words.

Those children relying on visual memory strategies to read can be identified using a nonsense word test. Nonsense words are "made up" words, for example 'zam'. Because these words are invented, the child will not have seen them before and in order to read them he/she will have to decode them. There are two nonsense word tests available to download from The Reading Reform Website (www.rrf.org.uk). If children struggle to complete a nonsense word test, then teaching them the principles of Synthetic Phonics will assist them to continue to be good readers and make good progress. Using nonsense words is a good way to help these children break the visual memorising strategy.

Is it ever too late to teach Synthetic Phonics?

Whether it is a child or adult who wants to learn to read the information they need to know and the process they need to go through is exactly the same. Obviously, the approach taken with younger and older learners is different. Many children make dramatic gains in reading ability and confidence when taught by Synthetic Phonics, having struggled for years with other methods.

Recommended Reading:

The Effects of Synthetic Phonics Teaching On Reading and Spelling Attainment: A Longitudinal Study by Joyce Watson and Rhona Jonston – Department of Psychology University of Hull, School of Psychology, St. Andrew's University. Published by the Scottish Executive, February 2005. (Available as a free download at: ww.scotland.gov.uk/Publications/2005/02/20688/52449)

The Reading Reform Website - **www.rrf.org.uk**

The 44 Sounds of English with one spelling pattern for each sound

Consonant Sounds								
/b/	b ball		/d/	d dog		/f/	f fan	
/g/	g gate		/h/	h hat		/j/	j jam	
/k/	k kite		/l/	l lips		/m/	m mug	
/n/	n nut		/p/	p pig		/r/	r rat	
/s/	s sun		/t/	t tap		/v/	v van	
/w/	w web		/y/	y yo-yo		/z/	z zebra	
/zh/	s treasure							
Consonant digraphs (two letters represent one sound)								
/sh/	sh shark		/ch/	ch cheese		/ng/	ng ring	
/th/	th thumb		/th/	th feather				
Short vowel sounds								
/a/	a ant		/e/	e egg		/i/	i igloo	
/o/	o orange		/u/	u up		/oo/	oo book	
Long vowel sounds								
/ā/	ai snail		/ē/	ee bee		/ī/	i spider	
/ō/	oa boat		/y/oo/ (2 sounds)	u uniform		/oo/	oo moon	
/oi/	oi coin		/ow/	ou cloud		/ə/ (Schwa sound)	er ladder	

r controlled vowels								
/ã/	air chair		/ä/	ar car		/û/	ir bird	
/ô/	or fork		/ē/ə/	ear ear		/ü/ə/	ure cure	
/ i /ə/	ire fire		/oo/ə/	our tour		/ow/ə/	our sour	

Tricky Graphemes

There are some letters that are used to write down sounds already represented by other graphemes. For example we use the letter c to represent the /k/ sound (already represented by the grapheme 'k') and the /s/ sound (already represented by the grapheme 's').

Letter	Sound		
c	/k/ as in cat, cot, cup	/s/ as in city, cycle, cents	
x	/k//s/ as in box, fox, fix	/g//z/ as in example, exam	/z/ as in xylophone
q(u)*	/k//w/ as in queen	/k/ as in bouquet, marquis, cheque	

* the q is almost always paired with the letter u.

Appendix 4

Examples of High Quality, Evidence-based Phonics Programs and Resources

Reading and spelling are reversible processes and need to be explicitly taught together through the use of a structured and systematic phonics program. There are a number of programs available for use by tutors, teachers and parents that cater for the literacy needs of individuals from pre-school through to adulthood.

Some examples of structured and systematic evidence-based programs for use by trained teachers, tutors, or parents who have undergone training courses appear below:

(Most SPELDs provide training in some of these programs)

- **Sounds-Write** – an evidence-based linguistic phonics program utilising a highly successful approach to the teaching of reading, spelling, and writing. It is aimed primarily at children in Pre-primary to Year 3, as a whole-school approach to teaching literacy and as an intervention program for middle to upper primary students and secondary students. It is also an excellent phonics program for adults.
- **Phonics Books UK** (including the Dandelion, Totem and Talisman Readers) – decodable readers which follow the teaching sequence (introduction of sounds and letters) from the Sounds-Write program and are accompanied by a range of student workbooks. Highly recommended for use with any structured synthetic phonics program or as a stand-alone program.
- **MultiLit Reading Tutor Program, MacqLit, Word Attack Skills Extension Program, MiniLit Early Intervention Program, PreLit Early Literacy Preparation and InitiaLit-Foundation** – very structured and explicit remedial programs developed by Macquarie University, which aim to address the needs of children with reading difficulties. The programs range in use from pre-school children prior to school entry (InitiaLit and PreLit), Foundation to struggling Year 2 students (MiniLit) and from Year 2 students to adults (MultiLit RTP, MacqLit and Word Attack).
- **Letters and Sounds** – designed as a whole-school approach to teaching literacy for students from Foundation to Year 3, but can be used effectively with any age group as a program for small group or one-to-one remediation. This program is supported by a range of free online resources and commercially available games.
- **PLD Literacy and Learning** – designed as a whole school approach from the Kindergarten or Foundation to Year 3, but can be implemented within individual classrooms and for small group intervention.
- **No Nonsense Phonics Skills** – this program provides a logical step-by-step approach to teaching reading, spelling, handwriting and language comprehension. It guides the student and the teacher through a series of carefully designed systematic phonics routines to assist students with the development of strong literacy skills.
- **Little Learners Love Literacy** – a systematic early literacy program which focuses on explicitly teaching phonemic awareness and phoneme-grapheme relationships. A range of supporting resources are available, based around the character of Milo, including decodable readers, games, activities and iPad apps.
- **Jolly Phonics and Jolly Grammar** – a multi-sensory synthetic phonics program, which includes activities and games for reading and spelling in addition to the main teaching content. It is aimed at children from Kindergarten to Year 3, and covers 42 letter sounds, common and alternative spelling patterns and grammatical concepts.
- **Alpha to Omega** – a structured phonics-based course, with detailed lesson plans and printable worksheets and resources for each stage. Alpha to Omega is the basis of the WordShark computer program, and both can be used as part of a comprehensive remedial approach.
- **WordShark** – focuses on the development of both reading and spelling skills using games involving phonics, onset and rime, homophones, spelling rules, common letter patterns, visual and auditory patterns and other aspects of literacy. It includes a course suitable for secondary school students, a sequence that follows Letters and Sounds, high frequency words, an alphabet and dictionary skills course, and a range of everyday vocabulary lists (useful for EAL). It is suitable for home and school use.

- **Reading Freedom** – a systematic phonics-based approach to the teaching of reading and spelling, which aims to equip students with effective literacy skills. It is especially useful for students with reading difficulties, and is intended for use in the middle primary through to lower secondary years.
- **Read, Write Inc. Fresh Start** – a synthetic phonics 'catch-up' program aimed at students in Years 5, 6 and 7. As well as modules specifically targeting phonics knowledge, the program includes applied reading activities, comprehension questions, grammar and writing activities.
- **Reading Mastery** – a complete basal reading program that uses the Direct Instruction method to help children (or older students) master essential decoding and comprehension skills. Each 30-45 minute lesson includes seven to nine short activities focusing on a range of skills including phonemic awareness, letter-sound correspondence, word recognition, vocabulary, fluency and comprehension.
- **Spelling Mastery** – is a six-level Direct Instruction program that teaches students dependable spelling skills utilising phonemic awareness, word recognition and morphemic awareness.
- **Corrective Reading** – a direct instruction remedial reading series that provides explicit, step-by-step lessons focused on teaching decoding and comprehension skills.
- **The Writing Road to Reading** – a comprehensive language program which covers phonemic awareness, systematic phonics, high-frequency vocabulary, word meanings and usage, word parts, grammar, composition, literacy appreciation, text structure, fluency, listening and reading comprehension.

Resources to support the teaching of phonics

- **Reading Doctor** - Apps for teaching kids to read and spell – this series of interactive and enjoyable effective Android, Mac and Windows-based apps teach children the essential skills of blending and segmenting, single letter sounds, letter-sound patterns and sight word recognition.
- **Phonics Handbook (Tom Nicholson)** – this book takes a phonological approach and is set out in the form of lesson plans designed to be used instantly, requiring no preparation. The lesson plans include every phonics skill from basic alphabet sounds to blends, digraphs, and syllable division, as well as diagnostic assessments of phonemic awareness, decoding skills, invented spelling, and writing.
- **The Complete Phonic Handbook (Diana Hope)** – this book contains colour-coded phonic word lists organised according to level of complexity and also includes activity suggestions. It is a useful guide for tutors to work through systematically with students.
- **Sound Check 1 and Sound Check 2** – these resource books contain activities to practise the blending of sounds to form words. There are phonemic awareness warm-ups and worksheets which encourage the application of letter-sound knowledge.
- **Nessy Learning Program** – this multi-sensory computer program begins with the earliest alphabet sounds and goes to an advanced level (16+). Each lesson follows a structured, phonic approach supported by hundreds of printable card games, activity sheets, mnemonics, reading and spelling assessments, storybooks and animated computer games to reinforce the rules and strategies for each teaching point.
- **Spelfabet materials (Alison Clarke)** – the Spelfabet website (www.spelfabet.com.au) contains a range of downloadable spelling resources which are consistent with explicit, systematic synthetic phonics teaching.
- **Phonics Activity Pack (DSF)** – this is an ideal resource for phonics-based intervention at any level. It includes a small magnetic whiteboard with a full set of 78 magnetic alphabet letters, digraphs, trigraphs, and vowel teams. Use the letter tiles to assist with a phonemic approach to spelling and to encourage the blending of sounds and segmenting of words. It also encourages reluctant writers to have a go at spelling.
- **Trugs (Teach Reading Using Games)** – these phonic reading card games provide enjoyable opportunities to practise reading accurately and fluently.
- **SPELD SA Phonic Books** – these decodable readers are free to download from the SPELD SA website (www.speld-sa.org.au/phonic-books.html). The books are grouped in order of complexity and are based on the sequence of sounds introduced in the Jolly Phonics program. There are currently 201 books and 151 worksheets to accompany these books.

Parent-friendly resources that do not require specialist training

These resources can be useful as a supplement to a well-delivered phonics program; however, it should be noted that they are not all stand-alone programs that will teach children how to read and spell - particularly if they are having difficulty acquiring these skills.

- **Beat Dyslexia** – a step-by-step multi-sensory literacy program for children with dyslexia, beginning with single letter-sound links and continuing through to blends, digraphs, short and long vowels, and complex spelling patterns. Each Beat Dyslexia book contains photocopiable activities, reading and spelling cards, teacher's notes and an audio CD.
- **Toe by Toe: A Highly Structured Reading Manual for Teachers & Parents** – a highly scripted, easy to follow program that teaches students phoneme-grapheme relationships in a sequential structured manner. The program teaches students to read polysyllabic words, uses repetition and nonsense words decoding throughout the program through syllable division.
- **Teach Your Child to Read in 100 Easy Lessons** – in 20 minutes a day, this step-by-step program introduces children to the reading process. Allows parents to work on a one-on-one basis with children in need of structured assistance.
- **ABC Reading Eggs** – this visually appealing computer program supports literacy development through phonics-based games. There are 120 lessons suitable for children aged 4 to 7.

Please note that this list is not exhaustive. Page 24 of the Understanding Learning Difficulties booklet provides criteria for evaluating whether a program is likely to be successful and this information can be used to assist in choosing a high quality, evidence-based phonics program.

Appendix 5

Recommended Apps List

Target Area: Phonological Awareness

Name of App	Age	Description	Cost	Note
Hearbuilder Phonological Awareness *Super Duper Publications*	K-Year 2	Phonological awareness – segmenting sentences into words, segmenting words into syllables, blending syllables, rhyming (identifying and generating). Phonemic awareness – identifying initial and final sounds, deleting sounds, segmenting and blending sounds in words, manipulating sounds in words. Provides clear goals to reach for each level and gives specific feedback when goals not reached.	Lite: Free Full version (see Hear builder website)	Must create an account to sign in and access all levels. Also available on Google play.
Syllables Splash *Smarty Ears*	K-Year 1	Activities to develop syllable segmentation. Words can be presented in pictures or written words (for older students).	Lite: Free Full: $12.99	Lite version only allows segmenting practice for 5 words
Beginning Sounds – Endless Phonics Reader *Innovative Mobile Apps*	K-Year 2	Select a target (e.g., 'basketball') and find 3 words (pictures) that have the same initial sound (e.g., 'balloon', 'bus', 'butterfly').	Full: $1.49	Multisyllabic words used – younger children may have trouble identifying initial sound
Chimp Fu *Nessy Learning Limited*	PP-Year 6	Activities to develop an understanding of all 6 syllable patterns.	Full: $4.49	Can be used with up to 5 players and progress is recorded.
Sound Beginnings *Preschool University*	K-Year 2	Simple games for identifying the initial, medial and final sounds in words. Indirectly targets vocabulary (choosing correct word – and then identifying its initial sound – to describe the picture)	Free	Cannot choose word length, Some multisyllabic words used (eg, 'underwear')

Target Area: Phonics

Name of App	Age	Description	Cost	Note
Initial Code *Sounds-Write Ltd*	K-Year 1	Official app for the Sounds~Write phonics program. Activities to further develop blending, segmenting, sound spelling correspondence, word reading and writing, sentence reading and writing. Activities are conducted in line with the exact 'script' in the Sounds~Write teaching program (including gestures).	Lite: Free Full: $7.99	Units 1-11 included Comprehensive instructions for parents included (must be played with a teacher, tutor, etc.)
Abc PocketPhonics Full Version: Letter, sounds & writing + first words *Apps in My Pocket*	Ages 5 and under	One of the best phonics apps. Strongly linked to structured synthetic phonics and comes with a parent guide.	Lite: Free Full: $10.99	Lite version includes activities only for practicing listening to and writing letters
Hairy Letters/ Hairy Phonics / Hairy Words *Nessy Learning*	Kindy +	Develops letter formation. Includes games to practise blending sounds to form short words.	Full: $4.49	(As above) Available on Google Play for $4.89
Oz Phonics *DSP Learning*	PP -Year 1	5 different apps for phonics development 1. Introduction to reading 2. Phonemic awareness and letter sounds 3. CVC, CCVC words, consonant blends, sentences 4. Consonant blends, CVCC words, digraphs, spelling 5. Long vowel spelling & R-controlled vowels	Each app (full): $2.99 - $4.99 Bundle: $13.99	Feature: Australian accent, NZ accent available Limited availability on Google Play
SoundLiteracy *3D Literacy, LLC*	PP +	Instructional tool that uses letter tiles to build and spell words. Helps reinforce the sound based approach to spelling.Blank tiles included to select your own targets for the activities.	Full: $14.49	Students must play with a tutor, speech therapist, teacher, etc.
Cambugs Letter Sounds *Cambugs*	K - PP	Flash card game to facilitate parents to assist children with letter sound knowledge. Instruction for parents on prompting and providing feedback. Includes the 26 letters of the alphabet.	Free	
Twinkl *Twinkl Limited*	Kindy – Year 3	A range of apps designed to support children to further develop skills taught in Phases 1 to 5 of the Letters and Sounds program.	Some free, others $1.29-$8.99	
Ladybird: I'm Ready for Phonics with Captain Comet *Penguin Books*	PP -Year 1	12 Levels of activities to support a student's progress in synthetic phonics.Aligns with the Letters and Sounds phonics program.	Full: $3.99 Bundle including the app below: $4.49	Available on Google Play for $2.79
Ladybird: I'm Ready to Spell *Penguin Books*	Year 1 - Year 3	Three interactive games to practice spelling.	Full: $2.99 Bundle including the app above: $4.49	Available on Google Play for $2.99
Teach your monster to read – Phonics and Reading *Teach Monster Games*	Ages 3-6	Children create a monster and take it on a magical journey over three extensive games - meeting a host of colourful characters along the way and improving their reading skills as they progress.	$7.99	Available on Google Play for $7.99
Touch and Write Phonics *Fizzbrain LLC*	PP-year 5	Extension of the Touch and Write handwriting app. A fun way for children to practice vowels, blends, digraphs and trigraphs as they write with a variety of mediums.	$4.49	

Target Area: Reading (Fluency and Comprehension)

Name of App	Age	Description	Cost	Note
Little Learners *Learning Logic*	K+	Little Learner books for Stages 1-7 of the Little Learners Love Literacy sequenced reading program.	$13.99 – $16.99 per stage- (5 books/ stage) Bundle of 10 stages: $99.99	
One Minute Reader *Read Naturally*	Year 1 +	Structured reading program aimed at improving reading fluency and comprehension. Also targets vocabulary development. Includes non-fiction stories that are modeled by a fluent reader in the program that the student can read along with.	Lite: Free Separate app for each of the 5 levels ($30.99 each)	
AbiTalk Second Grade Reading Comprehension Fiction *Abitalk Inc.*	Ages 6-8	Twenty stories about everyday life (150 words per story) that introduce new vocabulary and concepts, followed by multiple choice questions, true/false questions and matching activities to measure comprehension.	Lite: Free	"Developer needs to update this program for it to work on iOS 11."
K12 Timed Reading & *Comprehension Practice K12 Inc.*	Year 1 +	A series of short stories for young readers per grade level (fiction/non-fiction). Includes fluency timer (calculates words per minute) and comprehension questions.	Full: $5.99	Requires independence as a reader: fluency timer will not be accurate if readers skim over text without actually reading and understanding. Available on Google Play for $4.21
Reading Comprehension Interactive Learning *Success, LLC*	K – Year 4	Three separate apps to download (K-1, Grades 1-2, Grades 3-4). Engaging stories to improve reading fluency and confidence. Each story followed by a series of multiple choice comprehension questions.	Full: Free	
Reading Comprehension Camp *Smarty Ears*	Year 2 – Year 7	Customisable stories and quizzes to encourage auditory and reading comprehension as well as story generation skills.	Full: $30.99	

Target Area: Writing (Handwriting and Written Expression)

Name of App	Age	Description	Cost	Note
LetterSchool Free (Full: LetterSchool Block Letters) *Sanoma Media*	K +	Simple and rewarding game for practicing letter formation.	Lite: Free Full: $10.99	Does not link letters to sounds (reads letter name when formation complete) Available on Google Play for $6.99
iWriteWords *gdiplus*	K +	Engaging activities for practicing letter formation in isolation and in short words.	Lite: Free Full: $4.49	(As above)
Hairy Letters *Nessy Learning*	Kindy +	Develops letter formation. Includes games to practise blending sounds to form short words.	Full: $4.49	(As above) Available on Google Play for $4.89
Sentence Builder *Abitalk Inc*	K – Year 2	Focuses on correct sentence structure along with skills in pronunciation, grammar and punctuation. Able to customise pictures, words and sentences.	Lite: Free Full: $9.99	Available on Google Play for $1.92
Touch and Write Australia *Fizzbrain LLC*	K-year 3	Four versions available – Victorian Modern Cursive, QLD Beginners, Block Print and South Australian Font.	$4.49	

Target Area: Vocabulary / Grammar

Name of App	Age	Description	Cost	Note
Let's Name Things Fun Deck *Super Duper Publications*	Ages 3+	Flash cards that prompt "Let's name things that… (e.g., things that are noisy). Encourages students to practice naming (vocabulary) and categorisation. Game includes flashcards with no means of measuring accuracy of responses.	Free	Must be played with a partner who can determine correctness of responses and provide feedback. Available on Google Play
WH Question Cards: Who, What, When, Where, Why *Super Duper Publications*	Pre-primary (PP) +	Activities for asking the correct WH questions and answering WH questions (by multiple choice) Questions can either be read or heard by students. Activities include multiple choice (asking or answering questions) and matching games. Provides feedback if response correct/incorrect but no specific feedback to improve performance.	Lite: Free (includes "Who cards") Bundle: $17.99	Limited availability on Google Play
Using I and Me Fun Deck *Super Duper Publications*	K +	Listen to/read sentences (with pictures) and fill in the blanks to practice 'I' and 'me' personal pronouns.	Free	Provides corrective feedback when incorrect responses given Available on Google Play for $2.15
Kid's vocabulary, grammar & language learning games *Tribal Nova*	Ages 5 and under	Language development and early literacy activities.	Free	
Eggy Vocabulary *Blake eLearning*	Ages 3+	A set of games designed to help children build vocabulary. Involves reading and/or hearing words and matching pictures. Includes 252 vocabulary items.	Full: $2.99	Based on Reading Eggs
Vocabulary Practice: Greek and Latin Root Words Vocabulary *Game Always Icecream & Clever Dragons*	PP+	Useful app for learning and practicing etymology of words used in educational settings. Quiz includes 250 Greek and Latin root words that provides corrective feedback throughout.	Full: $2.99	

Target Area: Other (Literacy)

Name of App	Age	Description	Cost
Text Grabber *ABBYY*	Any	Picture to text reader. Also acts as a translator.	Free
Autodesk Sketchbook *Autodesk Inc.*	Any	Drawing app.	Free Available on Google Play
Britannica Kids *Encyclopaedia Britannica*	Any	A selection of apps to support learning in Science and Society and Environment (e.g., Coral Reefs, US Presidents)	$2.99 - $7.99 Available on Google Play
iTunes U *Apple*	Secondary	Online depository of lessons. Teachers can load recorded PowerPoints or learning materials for students to download.	Free Available on Google Play
iBooks *Apple*	Any	Electronic book reader.	Free Available on Google Play
Free Books Pro (full version) *My Books (free)* *Digital Press Publishing*	Any	Electronic book reader.	Free Pro version - $1.49 Available on Google Play
Kindle *AMZN Mobile LLC*	Any	Electronic book reader.	Free Available on Google Play
Easy Dyslexia Aid / Easy Spelling Aid *Nuapp Productions Ltd*	Any	Voice to text app that allows children to record their thoughts and get the correct spelling for unknown words.	$2.99 Available on Google Play for $1.99
BookRecorder *SAWAS and DS Company LTD*	Any	BookRecorder makes it easy for children, teachers, parents and grandparents to record their own audiobook.	Free

Target Area: Auditory Comprehension

Name of App	Age	Description	Cost	Note
Hearbuilder Auditory Memory *Super Duper Publications*	Kindy (K) – Year 8	Listening activities for: Memory for numbers Memory for Words Memory for Details; Sentence Completion; Memory for WH Information. Provides clear goals to reach for each level and gives strategy ideas when goals not reached.	Lite: Free Full version (see Hearbuilder website)	Must create an account to sign in and access all levels. Might need some help with American vocab (e.g., quarter). Available on Google Play
Hearbuilder Following Directions *Super Duper Publications*	Pre-K – Year 3	Follow directions of increasing difficulty (more steps to the instruction). Provides clear goals to reach for each level and gives feedback when targets not met.	Lite: Free Full version (see Hearbuilder website)	Must create an account to sign in and access all levels. Available on Google Play
Hearbuilder Sequencing *Super Duper Publications*	K – Year 6	Sequencing picture cards to match spoken phrases. Provides clear goals to reach for each level.	Lite: Free Full version (see Hearbuilder site)	Available on Google Play
Fun with Directions *Hamaguchi Apps for Speech, Language and Auditory Development*	Ages 5 and under	Interactive games that require players to respond to simple and complex directions. Skills of listening, following directions, colours, spatial concepts, auditory memory and auditory processing also required.	Lite: $1.49 Full: $24.99	
More Fun with Directions *Hamaguchi Apps for Speech, Language and Auditory Development*	Ages 5 and under	Interactive and engaging games to practice listening, following directions, colours, comparatives (larger/smaller) spatial concepts, auditory memory and auditory processing.	Lite: $1.49 Full: $24.99	
Picture the Sentence *Hamaguchi Apps for Speech, Language and Auditory Development*	Ages 4+	Practice language and auditory processing tasks at the basic sentence level. Encourages children to create mental images from what they hear.	Lite: $1.49 Full: $14.99	
Splingo's Language Universe. *The Speech and Language Store LLP*	Ages 18 months – 4 years	Develop listening and language skills. Instructions range from a very early level of language development (e.g. single word recognition) to much more complex (e.g. instructions combining several aspects of language at once).	Full: $4.49	Available on Google Play for $3.20

Note: Apps listed as Lite are usually supported by advertising and can be restricted in the number of games or levels available. Apps listed as Full generally have no ads and all levels/features are unlocked. Lite versions of these apps are designed for you to review the suitability of an app prior to purchasing.

Appendix 6

Useful resources for parents

Australian Websites:

- AUSPELD www.auspeld.org.au
- The Dyslexia – SPELD Foundation (DSF) www.dsf.net.au
- SPELD Queensland Inc www.speld.org.au
- SPELD NSW www.speldnsw.org.au
- SPELD SA www.speld-sa.org.au
- SPELD VICTORIA Inc www.speldvic.org.au
- Raising Children Network www.raisingchildren.net.au
- Learning Difficulties Australia (LDA) www.ldaustralia.org
- Kids Matter www.kidsmatter.edu.au – For self-esteem, resiliency and anxiety
- Children and Young People with Disability Australia (CYDA) www.cyda.org.au
- Macquarie University Special Education Centre www.figshare.com/articles/MUSEC_Briefings_Archive/5096455
- Five From Five www.fivefromfive.org.au

International Websites:

- International Dyslexia Association www.dyslexiaida.org
- National Centre for Learning Disabilities www.ncld.org
- Understood www.understood.org/en
- LD Online www.ldonline.org
- Dyslexia Action www.dyslexiaaction.org.uk
- Reading Rockets www.readingrockets.org

Assistive Technology Websites:

- Spectronics www.spectronics.com.au
- Independent Living Centres Australia www.ilcaustralia.org.au

Recommended Reading:

- *Raising kids who read: What parents and teachers can do* by Daniel Willingham (2015), Wiley.
- *Basic Facts about Dyslexia & Other Reading Problems* by Louisa Cook Moats and Karen E. Dakin (2007), IDA.
- *Visible Learning* by John Hattie (2009), Routledge
- *Overcoming Dyslexia* by Sally Shaywitz (2005), Vintage.
- *Proust and the Squid* by Maryanne Wolf (2008), Harper.
- *Helping Children with Dyslexia* by Liz Dunoon (2010), Global.
- *When your Child has Dyslexia* by Abigail Marshall (2009), Adams.
- *From ABC to ADHD: What Parents Should Know about Dyslexia and Attention Problems* by Eric Q. Tridaz (2007), IDA.
- *Taking the Hell out of Homework* by Neil MacKay (2011), SEN Marketing.
- *Teaching Kids to Read: Basic Skills for Parents and Teachers* by Fay Tran (2010), Wilkins Farago

Would you like more information?

There are SPELD organisations in all Australian States offering a wide range of support and educational services to families, schools and allied health professionals. Please go to the AUSPELD website for further information, or to locate the contact details for your nearest SPELD.

www.auspeld.org.au

AUSPELD is a proud global partner of the International Dyslexia Association (IDA).

AUSPELD
supporting people with learning disabilities

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