

Dyslexia – what's in a name?

Dyslexia is one of the main 'conditions' in the Specific Learning Disabilities category, others being dyspraxia, dysphasia, dyscalculia, dysgraphia and ADHD, which in fact often co-exist. The word itself quite literally means: Dys – problem, lexia – read (can't read).

Dyslexia itself is a life-long condition, usually inherited, which is generally considered to affect around 10 per cent of the population.

It is unrelated to intelligence, language, background or race. In fact learners are often first identified as dyslexic when they fail to make expected progress despite at least average intellectual ability and satisfactory educational experience.

One of the complicating factors as far as understanding dyslexia is concerned is a lack of consensus about the criteria for diagnosis, and it is one of those conditions that attract a number of theories, not all of which are research-based. There are also differences in how dyslexia is viewed in different countries. However, there are generally accepted facts about the condition, and a number of useful definitions, which convey a broad understanding. The one below was approved by the British Dyslexia in 2007:

"Dyslexia is a specific learning difficulty that mainly affects the development of literacy and language-related skills. It is likely to be present at birth and be lifelong in its effects. It is characterised by difficulties with phonological processing, rapid naming, working memory, processing speed, and the automatic development of skills that may not match up to an individual's other cognitive abilities.

It tends to be resistant to conventional teaching methods, but its effect can



Ros Lugg

be mitigated by appropriately specific intervention including the application of information technology and supportive counselling." <http://www.bdadyslexia.org.uk/dyslexic/definitions>

In New Zealand, one complicating factor is that dyslexia itself was only officially recognised in 2007. Prior to this, specialist assessment providers tended to avoid what they felt was a 'contentious' term and label children with the more umbrella term SLD (Specific Learning Disability). However, the Ministry of Education now provides resources and advice on dyslexia and its definition includes mention of 'secondary characteristics' that may be involved, including "difficulties

with auditory and/or visual perception; planning and organising; short-term memory; motor skills or social interaction". <http://literacyonline.tki.org.nz/Literacy-Online/Student-needs/Learners-with-special-education-needs/Dyslexia>

What these definitions highlight, though, is that dyslexia is intrinsically complex. There is huge variability in both patterns of difficulties, and also in severity. Many learners with very mild signs of dyslexia are never formally diagnosed – and didn't really need to be! Often a well-compensated and well-supported learner will make good progress academically, despite mild signs of dyslexia. However, at the other end of the spectrum, difficulties may be

extremely severe and this can place a significant burden on a school's resources.

Internationally, dyslexia is recognised as one of the key reasons for educational underachievement and it is well-documented that a significant proportion of prison populations are, in fact, dyslexic. Percentages quoted in a variety of international studies range from 48 per cent to 80 per cent. The Dyslexia Foundation in 2008 quoted New Zealand research, which showed that 90 per cent of prison inmates are not functionally literate.

Interestingly, although there is currently no consensus about any differences between ethnic groups, there is strong evidence that English is a particularly challenging language for dyslexics, mainly because is orthographically more complex and irregular than most other languages.

So what, exactly, causes dyslexia? As stated before, it is recognised as being primarily an inherited condition, although there is also a condition known as 'acquired dyslexia', which is a similar pattern of difficulties caused by head injury or other brain trauma. Dyslexia is, in essence, a neurological condition, and recent advances in brain imaging technology are adding significantly to our understanding. There are, in fact, three main deficit theories on the causes of dyslexia:

- the phonological deficit theory – relating to the particular difficulties with phonological awareness and development of phonic knowledge;
- the cerebellar deficit theory –relating to central processing difficulties, which cause problems with automaticity and information processing;
- the magnocellular deficit theory – relating to visual and auditory deficits

All have varying amounts of scientific evidence behind them, although there is a particularly comprehensive body of evidence supporting the theory that phonological deficits are implicated in dyslexia. Phonological awareness is, of course, a crucial component in early literacy development.

In confirmation of the phonological deficit theory, there have been a number of fMRI (functional MRI) studies into differences in brain activation and they clearly show that dyslexics use different areas of the brain when reading. A leading US researcher, Sally Shaywitz (Overcoming Dyslexia, 2005) explains that, in fluent readers, an area in the occipito-temporal area of the brain is responsible for the instant visual recognition of a word. This area is often referred to as the 'word form' area. This is the area of the brain that recognises a word in a fraction of a second, as opposed to having to laboriously decode it as an early learner may need to do. In other words, it is crucial for reading fluency.

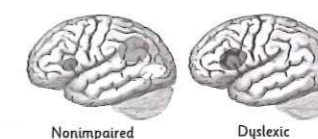
In dyslexics, fMRI scanning has shown that this occipito-temporal area is initially not activated, but some fascinating follow-on studies have indicated that, with correct remediation, brain activation patterns in dyslexic learners can change to the pattern seen in non-dyslexic learners.

The evidence reinforces the need for a structured, multi-sensory approach to literacy, which incorporates plenty of reinforcement, but also specific development of the underpinning perceptual skills, such as phonological awareness, sequencing, visual perception and memory. In practice, with learners with moderate-severe difficulties, reinforcement is often best provided through software reinforcement and hands-on teaching games.

So what should we look for, when identifying learners who may be dyslexic? In the school system, there are a number of possible indicators. These include:

- Unexpected and persisting difficulty with reading or spelling;
- Poor or erratic handwriting;
- Difficulties with short-term memory, particularly with following verbal instructions;
- Problems with organisation or planning;
- Difficulties with sequences, particularly rote sequences or times tables;
- Family history;
- Poor concentration;
- Inconsistency – good or poor days, with no apparent reason.

Conversely, however, there are often many strengths, particularly involved with 'right hemisphere' functions such as creativity or imagination. Dyslexics are often visual thinkers and frequently perceive things differently and think laterally.



Many have excellent spatial abilities, which can be a particular asset in fields such as design, art or computing. There are many successful dyslexics, such as Andy Warhol, George Patton, John Lennon, Nigel Kennedy, Richard Branson and even Albert Einstein. A common story with many of them is that they struggled through school, but achieved success when they got into fields that suited or nurtured their abilities.

Many teachers in the dyslexia field quite rightly regard dyslexia as a 'learning difference', rather than a disability and recognise the need to cater for people who think and learn in different ways.

A key part of this is, of course, providing dyslexics with the opportunity to show their strengths, rather than confronting them only with aspects they struggle with.

An important principle in this field is the need to treat learners as individuals, not concentrating on choosing the correct 'label', but assessing their individual learning needs and providing them with the right opportunities and support. Currently, far too many people leave the school system regarding themselves as 'failures' because they weren't able to overcome their literacy difficulties and, tragically, many never overcome this image of themselves and realise their potential. [\[5\]](#)

References:

Moody, K, University of Texas in conjunction with Texas Department of Criminal Justice (2000).

Dyslexia in the Prison Population, Shaywitz, S, Yale Center for the Study of Learning and Attention, 2005.

Overcoming Dyslexia. Literature Review: An International Perspective on Dyslexia, Ministry of Education, Shaywitz, Mody & Shaywitz, 2006 Neural Mechanisms in Dyslexia, Snowling, M (1997).

Developmental dyslexia: an introduction and theoretical overview.

Ros Lugg is a Director at The Learning Staircase, OCR Diploma in Specific Learning Disability, NZCER Registered 'C' Grade Tester. She is an experienced assessor and dyslexia specialist. She designed the Steps software programme, now in 700+ New Zealand schools and some of the top specialist dyslexia schools in the UK.

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We receive calls on a daily basis from concerned parents, teachers and educational personnel asking for tools to assist with supporting writing, reading and interpretation of meaning.

Writing is a necessity for academic success and a basic requirement for participation in life. When any individual struggles to express their ideas, they often feel alienated and frustrated. Providing students with the tools they need to bridge the gap in communication can dramatically affect not only their ability to express themselves, but their overall outlook on learning.

Assistive Technology – what tools can assist?

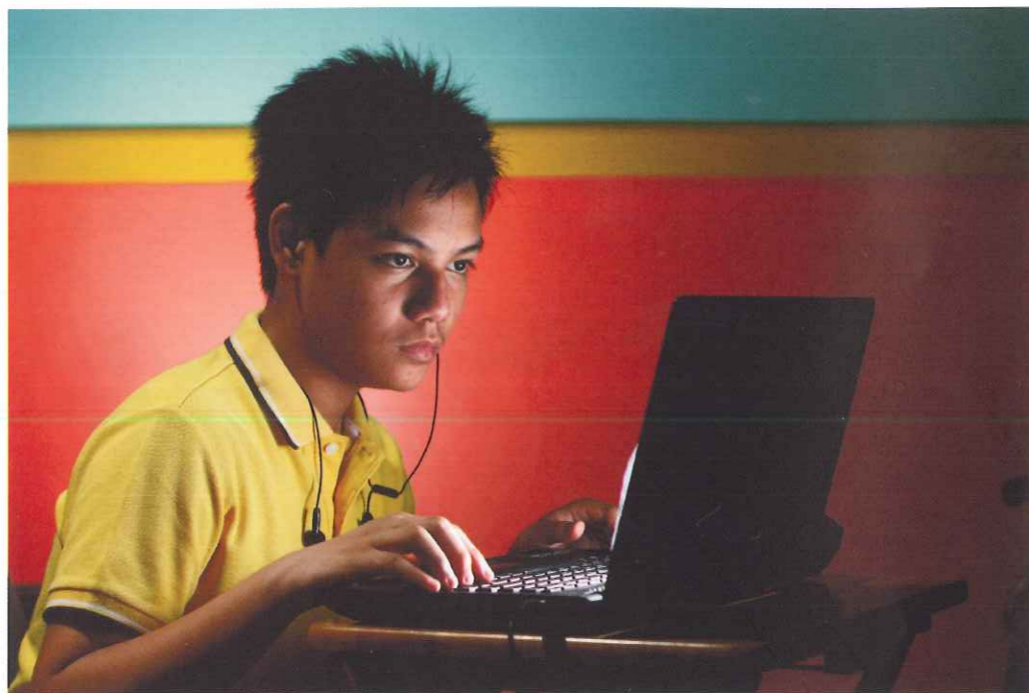
Most of us are dependent on the spell checker and grammar checker in our word processing application. We make full use of the synonyms, vocab lists and thesaurus as standard tools to support our writing. The appropriate use of assistive technology can remove barriers for struggling reluctant writers and those with developing language skills.

Text to speech

It is no surprise that struggling students need more engagement with print. Having the computer highlight word by word and read back the text they have written provides a positive, rewarding experience.

The text begins to make sense when they can hear back what they are writing and viewing. Editing and proofing work becomes a much easier task when they can listen to their written work being read aloud.

Any selectable text in any application – including the internet, worksheets and websites containing textbooks – can be read back. If the document contains pdf or graphic-based text, there is software to capture this and read back word by word.



Word prediction

As a student types, the software monitors the input letter-by-letter and produces a list of words, in a separate 'prediction box', that begin with that letter. Each time a letter is added, the list is updated giving the student a selection of words to support their writing.

Word prediction is a superb empowering tool for the most reluctant writer – those students for whom the thought of writing a paragraph, even on a computer, is terrifying. In pre-writing brainstorming activities students can create content-specific Topic Dictionaries. The words in the Topic Dictionary will appear above any other predicted word, and the writing process becomes personalised.

Mind mapping

Mind Maps are visual maps of connecting thoughts that span out in a radial way from one central idea. A Mind Map uses only keywords to prompt memory and association. With many mind maps the student can record their thoughts or information around the picture or image they have used. The recording can be played back within the outline

mode providing yet another means to assist the student when they begin the process of creating their written work.

Mind mapping applications can be used with the support of word prediction and text to speech. With an application like WordQ, the Topic Dictionary can be brainstormed and the Topic Dictionary and word prediction used within the mind map, assisting the students' progress through the writing stages.

Speech to text

With an application like Dragon Naturally Speaking, the user speaks and the software recognises what was said and types it into the computer. Dyslexia affects different people in different ways. Some people with dyslexia will be able to use voice recognition software without any problems. Others may have difficulty with the initial voice training, dictation or correction.

Before starting to use a voice recognition program you have to read out a document that is presented on the screen. This can be an issue for people who are not fluent readers.

There are a number of ways to work through this. The voice recognition program offers a choice of texts. Some are easier to read than others, or can be read alongside a helper - the helper reads the text on the screen in small sections and the user repeats it a section at a time.

Smartpen

The Livescribe Smartpen captures everything that you write and everything that is spoken. Inside the pen is a camera that takes a picture of your notes as you write them. It also has a built-in microphone that lets you record what is being said.

Where to from here

Ministry of Education-CAT have done a number of comparative reviews on applications across various platforms. The easiest way to access these resources is to search the internet for "ministry of education cat". For lists of various applications, 30-day trials, evaluation equipment or training dates email atinfo@dtsl.co.nz or call 0800-370-198. 

By Catherine Brill,
Manager, DTSL - Assistive
Technology

Advocacy week to focus on improving student achievement

Dyslexia Advocacy Week (DAW) takes place this year from March 16-22, with a key focus on improving the dyslexic student's experience and achievements in the classroom.

Fundamental to this is the provision of NCEA Special Assessment Conditions (SACs) for students with learning differences as they sit NCEA level exams, and the provision of similar accommodations for those in the earlier, formative years as they move through the education system.

Run by Dyslexia Foundation of New Zealand (DFNZ), DAW 2015 is designed to empower and activate parents to advocate for their child's legal rights in the classroom, which include access to SACs, and the provision of resources by schools and others such as RTLBs (Resource Teachers: Learning and Behaviour).

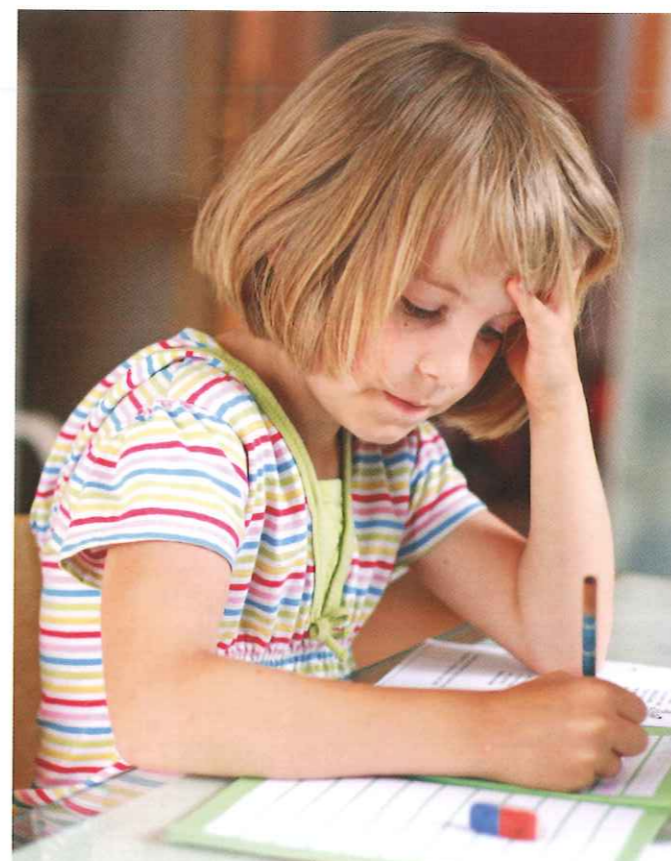
A focal point of the week will be the 'Plus 20 in 2015' initiative, aiming at lifting the numbers of students receiving NCEA SACs such as reader or writer assistance, computer use, or extra time. The target is to lift numbers by more than 20 per cent this year, with DFNZ working with Ministry of Education and NZQA to raise awareness of SAC requirements and the obligations of school partners.

SACs are core to the role and responsibilities of boards of trustees and principals, and SAC support is now part of RTLb job descriptions.

The 'Plus 20 in 2015' initiative will build on key recommendations from the NZQA and MoE's 2014 review of the use of SACs in NCEA.

Find out more about Dyslexia Advocacy Week at www.dyslexiafoundation.org.nz

Join the conversation on facebook at <https://www.facebook.com/dyslexiafoundationNZ> 



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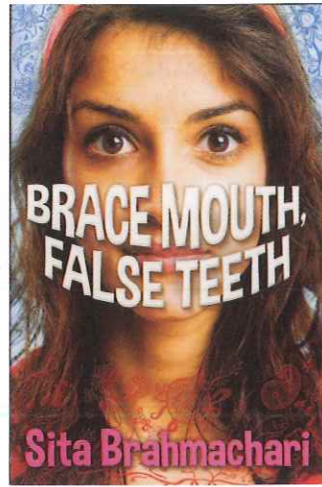
Website: assistive.dtsl.co.nz



Publishers dedicated to ‘cracking reading’

Barrington Stoke is an independent publisher dedicated to cracking reading. They know that every parent wants their child to become a reader, and every teacher wants their students to make the jump from learning to read to loving to read.

Patience Thomson and Lucy Juckes founded Barrington Stoke in 1997, back when publishing output for struggling readers was virtually non-existent, and the concept of dyslexia-friendly literature seemed almost a bad joke. In the UK the National Literacy Trust was four years old and the National Literacy Strategy was not yet out of the box, but national testing showed that just 63 per cent of children reached expected levels of literacy by age 11. That year also saw the publication of Harry Potter, cementing a golden era of children's



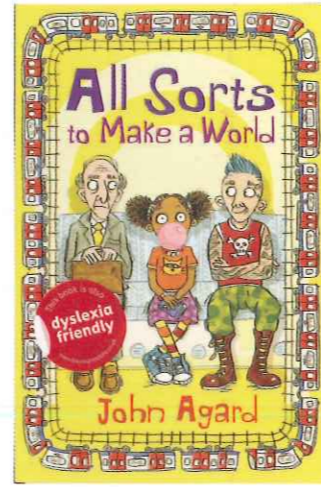
literature.

But the Barrington Stoke founders were aware of a growing inequality. While there were more and better books available for children to read than ever before, there was also a growing minority of children and

young people who couldn't access the brilliant (and increasingly long and involved) texts their peers enjoyed.

Their idea was, on the face of it, a simple one. They planned to publish brilliant short books by well-known writers with special adaptations to ensure accessibility for dyslexic and less experienced readers. The books would be commissioned, edited and designed to break down the barriers to reading, from dyslexia and visual stress to simple reluctance.

Making that vision a reality was rather more complex. Before the first books were published, they consulted a raft of experts in ophthalmology, reading theory and special educational needs, supplementing Ms Thompson's dyslexia expertise and Ms Juckes' publishing background.



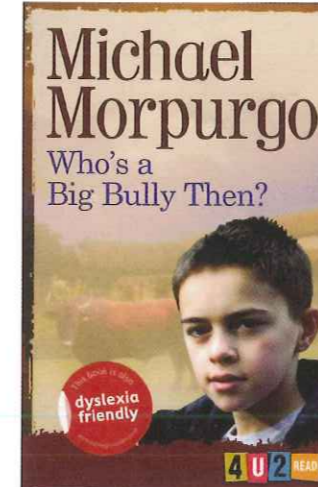
Financial backing came via a loan from the bank and a band of private investors, many of whose children had been pupils of Ms Thomson, who had been a principal at a specialist school for children with specific learning difficulties.

Crucially, the authors were attracted to the idea and came on board – Michael Morpurgo and other top authors helped them launch the list then and have been writing for them ever since. So, what's the difference between a 'standard' and a Barrington Stoke Morpurgo?

35,000 words? The first Barrington Stoke word counts were an achievable 5000 – 10,000.

The count has since been taken down to 250 and up to 15,000 for different reading levels.

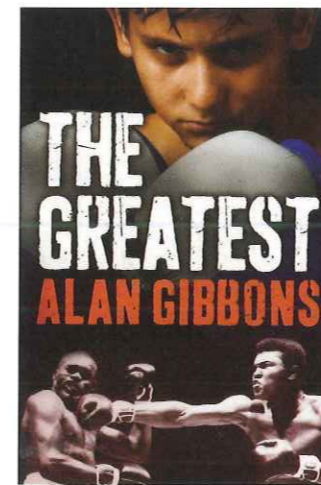
The books are typeset in the highly readable Barrington Stoke Roman typeface, with special spacing to support dyslexic readers. The books were printed on heavy cream paper to combat visual stress and eliminate problematic show-through.



Nowadays they use a two-colour process to achieve the same effect.

They have never commissioned simplified books – from the beginning they asked authors to write the story they wanted to write. Language specialists become involved later on.

First and foremost, the list proved itself in the way that really mattered – parents, teachers and librarians found their children could read the books. Sixteen years later, and the postbag still brings tears to the eye, the publishers say: "I just wanted to let you know how much you have changed my son's life."; "It has really boosted her confidence and she is so proud of herself." "To hear my child reading out loud to herself without my assistance was the most wonderful thing ever."



Early intervention can boost success

Specialised, early intervention can significantly boost success at school for a child with dyslexia, according to research. One-on-one, personalised tuition resulted in vast and surprising improvements in achievement skills, according to Dr Karen Waldie, Associate Professor of the School of Psychology at Auckland University.

SPELD NZ, in collaboration with school RTLBs (Resource Teachers of Learning and Behaviour), carried out a pilot study involving 42 seven-year-old students struggling in the classroom as a result of dyslexia.

Dr Waldie analysed the resulting data and says she was taken by surprise.

"I knew that I would find that students would increase their

reading skills after SPELD lessons. What I didn't realise, however, was just how successful the pilot programme would be.

"The children increased their predicted reading success by 20-44 per cent in areas of sound blending, phonemic awareness, verbal comprehension and reading fluency. However, their general cognitive abilities also significantly improved. We saw vast improvements in thinking ability, cognitive fluency and processing speed. I am truly impressed."

The *New Zealand Journal of Educational Studies* published the research findings, noting the improvement of cognitive efficiency and processing speed was "testament to the ability of the brain to be modified, presumably via strengthened neural connectivity, following even a relatively brief (60



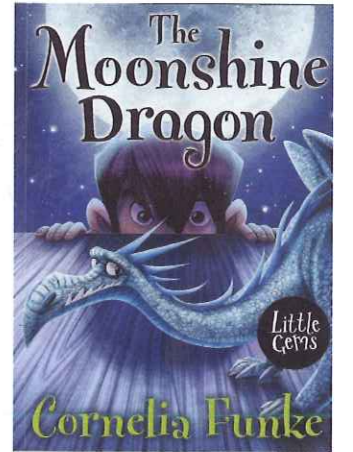
session) exposure to an enriched environment in the form of SPELD intervention".

The students in the study came from a variety of schools, ranging from decile 1 to decile 10. They received 60, 45-minute sessions of one-on-one tuition, twice weekly, from SPELD NZ teachers. Each child had assessments of their academic and cognitive abilities before and after the 60 lessons using the Woodcock-Johnson III (WJIII) test battery. SPELD NZ's chairperson Marion Fairbrass says although the sample size was small, it was a first step and the findings were very encouraging.

"They indicate that specialised teaching, built on solid foundations, can make a strong contribution to those with dyslexia and to the wider education sector.

"The pilot programme proves that by investing in our under-achieving seven-year-olds, we can help them achieve literacy and success at school. As dyslexia and other specific learning disorders can be hereditary, this could have a flow-on intergenerational effect. Can we afford NOT to help these children?"

The research findings will be used to develop and underpin similar studies planned for the future. [E1](#)



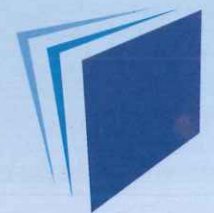
The company has also enjoyed "gobsmacking" support from authors, illustrators, agents, librarians, teachers, parents, booksellers and the trade press. The Bookseller says: "It is impossible to remember life before Barrington Stoke."

"Thanks to enlightened booksellers the list is now on core stock at many UK retailers and bestselling Mr Gum author, Andy Stanton, once told an interviewer he knew he'd made it when we came knocking at his door," Ms Thomson says.

"There are many steps on the road to reading for book-deprived children – otherwise Harry Potter or the Hunger Games can prove just another dispiriting experience that confirms that reading really isn't for them. "That's what our books exist to do, and our biggest challenge is to continue to win the

hearts and minds of those who can help us reach all of those children who are not readers yet, but – with the right help – could be."

Barrington Stoke books are distributed in New Zealand by South Pacific Book Distributors Ltd. [E1](#)



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