

2017 Primary Principals Sabbatical Report

Dyslexia: Could it be inhibiting student achievement across the key areas of the curriculum for some learners?

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Focus:

The focus of my research is to better understand dyslexia and how teachers can best identify and work with students who have dyslexia.

Background:

We know that there is a tail of underachievement nationally in literacy and mathematics. At Discovery School we are fortunate to have excellent teachers who provide well planned motivating lessons, yet despite this, we have some students whose progress does not match that of their peers. Some of these students have had extensive time on Reading Recovery with a very skilled teacher, yet after being discontinued from the programme, they do not continue to make their expected progress; why is this?

Questions that are raised in my mind are:

- What is it that is hindering learning for some students?
- What more can we do to make learning more engaging and enjoyable for these students?
- Do we need to start looking differently at what we are doing to see if adaptations to our current approach or the introduction of a new approach, can help the students who make up this tail?

This sabbatical has given me the opportunity to learn more about dyslexia, to explore some programmes being used at other schools, and to consider teaching methods that may enhance learning for students with dyslexia to better cater for these learners in a classroom.

Defining Dyslexia:

Defining dyslexia is a complex and contested area and there are no internationally agreed definitions. The underlying theme throughout definitions is that “dyslexia involves an unexpected and persistent difficulty in learning to read, write and spell that cannot be explained by other factors.”

The Dyslexia Foundation of New Zealand use the following definition:

“A specific learning difference which is constitutional in origin and which, for a given level of ability, may cause unexpected difficulties in the acquisition of certain literacy and numeracy skills.”

Implications:

Research undertaken by Ros Lugg, (2016) tells us that 1 in 10 students is likely to have dyslexia, it is prevalent in most cultures, irrespective of a child’s language. Dyslexia has a significant impact on learning, especially in literacy related tasks, and without the relevant literacy skills, students can have their learning across the curriculum impacted. Therefore it is likely that in most New Zealand classrooms there is likely to be 2 or 3 students with dyslexia. My concern is that many of these learners are not identifying as dyslexic, and are missing out on support that could make their schooling a more positive experience for them. For example at Discovery School, which has an end of year roll of 480 students, currently there are only 3 students diagnosed with dyslexia. Using Ros Lugg’s theory there would be approximately 45 students posing with dyslexia who have not been identified.

My hunch is that we have students with dyslexia who are travelling through our education system undiagnosed and if we can know who they are, we may be able to better identify their personal learning needs to improve how we cater for them. I’m not suggesting that every child not reaching the standard has dyslexia, nor that teachers are not doing a good job, but there may well be students who have not been identified as dyslexic who could benefit from some teaching adaptations in their classroom programme. If teachers can identify individual student’s learning strengths along with what makes learning difficult for them, my hope is that they will be better placed to assist these students in helping them to reach their true potential so that they can feel a sense of achievement and feel successful as a learner.

As teachers we can also influence how other students view dyslexic learners, if all students know that they will achieve new learning in the end, but that some require a longer path to get there, this will help their peers have greater appreciation that we all learn given time.

Jodi Clements (2011), Australia's Dyslexic Association president, says there are too many children with dyslexia "unidentified and ignored" and lacking critical literacy knowledge. Is it the same here in New Zealand?

Methodology:

- professional reading both online and from texts
- viewing numerous YouTube and video clips
- visiting several teachers who specialise in dyslexia
- visiting SPELD teachers
- visiting a classroom using the Arrowsmith Programme
- attending lectures by Nathan Mikare-Wallace
- reflecting on our current practice and taking time to consider my new learning and how best to share this with others to have the best outcomes for our dyslexic students

"No two students learn in the same way, nor do they bring the same prior knowledge to a learning experience. The way we learn is as unique as our fingerprint." Mark Osbourne (2017)

Findings:

The Dyslexic Brain

Neurological research in recent years has become more helpful in identifying how the brains of individuals work. This has resulted in a closer association between neurologists findings and how their research can assist educators. Neuroscientists are investigating brain activity during fluent reading and their discoveries will in time have implications, that could help clarify dyslexia and other reading deficits. Brain research, including studies from Yale and Auckland Universities, has shown that while it is common to use the 'verbal' left side of our brain to understand words, dyslexic people use the 'pictorial' right side - making them slower to process and understand language.

Mikare-Wallace (2017) describes dyslexia as a spectrum not a disorder. The brain of a dyslexic person simply works differently. Dyslexia is not an indication of limited intellect or low ability, it is a hereditary condition that is the result of a different wiring in the brain.

It is helpful to identify the strengths of a dyslexic thinker, because looking back through history we have many examples of dyslexic thinkers who have made a positive impact and contribution to mankind, yet learning at school was difficult for them. For your reference famous dyslexics include: Albert Einstein; Thomas Edison; Winston Churchill; Da Vinci; Pablo Picasso; Tom Cruise; Steven Spielberg; Keira Knightly; Cher; Richard Branson; Richard Taylor; Billy Graham; John Britten; Bill Gates; Whoopi Goldberg; Jackie Stewart; Mohammed Ali. These successful dyslexics learned to overcome, or sidestep their hidden and frustrating barriers, permitting them to accomplish their dreams and desires. In fact you could say that their dyslexic brain was the catalyst for their success in utilising their talents. Below I have listed some of the traits that are commonly seen in dyslexic people.

Strengths of a Dyslexic Thinker:

- Seeing the big picture
- Bright, highly intelligent and articulate
- Holistic thinkers
- Vivid imaginations
- Highly creative
- Good problem solvers / original thinkers
- Skilled pattern recognition
- Good spatial knowledge
- Sharp peripheral vision
- Entrepreneurial skills
- Aptitude for construction
- Empathic, cooperative and collaborative

In the case of dyslexic students it can be helpful for the child to know that they are dyslexic as it helps them to understand why literacy learning is more difficult for them compared to their peers, this can protect the child's sense of self worth, especially in relation to their learning. Knowing that a child has dyslexia assists their parents and wider family members to understand why their learning is slower at coming together, reducing their stress levels and perhaps encouraging them to seek some support for their child's learning, and for our teachers it highlights that the programme for these students will require some adaptation from other learners to better cater for their learning needs.

Pope-Mayell, (2017) chair of Trustees, Dyslexia Foundation of New Zealand argues that labelling a dyslexic is liberating, he states:

“it is my observation that, in the absence of skilful intervention, when the dyslexic individual moves into the education system they become prone to self doubt and self-esteem issues. The consequences are fuelled by environments focused on comparison and arbitrary benchmarks, and where knowledge and understanding about dyslexia is often absent. The antidote to this self doubt is certainty. For the dyslexic, the label can provide this. When dyslexia is understood as a potential creative gift this also gives hope. With certainty and hope an individual can move forward.”

Identifying Dyslexic Students:

Dyslexia may manifest itself in the classroom in a number of different ways. The following are general ‘markers’ to support teachers in their observations of those learners who would benefit from dyslexia friendly approaches. People I called upon for my research (see acknowledgements below) felt that teachers need to look closely at students who are about 7 ½ - 8 years old, as this is when dyslexia starts to deeply affect their learning. Also many of the screening tools are not accurate for students below 7 years old. We owe it to our intermediate aged students to have them diagnosed before they start college, as this will enable them to get reader / writer support for exams, computer use and extra time under the special conditions assessments for NCEA.

Dyslexia Markers:

When reading with students the teacher might notice students who have difficulty decoding words and their meanings when compared to their ability appropriate skills in other areas. They may immediately forget what they have just read, they may read at a slower pace than their peers and may skip words or lines as they read, they may not recognise a word on the same page that they had read just minutes before. These are traits common to dyslexics, and should alert the teacher to keep observing them closely.

Dyslexic students may also have lots of ideas for writing but have difficulty putting them onto paper, taking a lot longer than others to write, and producing less content on completion of the task, than the other students. They may confuse vowel sounds or letters, sequence letters incorrectly within written words, and reverse letters and numbers. Teachers may also notice that they are unable to contribute rhyming words, may struggle with the chunking of words and have difficulty committing things to memory like times tables and number sequences.

A teacher might also notice that after in depth teaching of a concept over several days, it appears to be new learning again for the dyslexic child, as they have not mastered the concept and it appears to be forgotten, despite the previous teaching. They may struggle to identify left and right, and have difficulty remembering instructions given. All the factors listed above may point to a student having dyslexic tendencies.

One of the best indicators to confirm if a student has dyslexia and requires further screening is the student's PAT tests, as they are a good indicator of dyslexia. If there is an obvious gap between a student's average to high PAT Listening Comprehension test score and their Reading Comprehension test score, which is low, this warrants further investigation.

Parents may also be a source when identifying a child as dyslexic, as dyslexia often has a family history, the child may have been early to walk but may never have crawled (thus missing out vital brain development between the right and left hemisphere).

The Dyslexia Foundation of New Zealand (DFNZ) was formed in 2008 to provide a voice for, and services to, New Zealanders with dyslexia. Their "4D for Dyslexia" website has some very useful information. The checklists under the assessment section are useful tools for teachers in identifying dyslexia in students, to ascertain if further referral is required.

Screening Tools

There are several checklists that teachers can use to confirm their suspicions of dyslexia and those found in the 4D resources are worth using for a quick snapshot. It is also becoming more common for schools to purchase one of the many screening tools available, but these require a staff member who can administer the tool and analyse it accurately. This can confirm that further investigation by an expert in the field is required. If a teacher feels that a student meets the criteria noted above identifying dyslexic tendencies, and feels that further investigation is warranted, there are several avenues to do so. However, many come at great cost.

A school's resource teacher of learning and behaviour (RTLB) may have links to educational psychologists, SPELD teachers, Arrowsmith Programmers, etc, as an in depth assessment by a professional can clearly identify the student's strengths and weaknesses in particular aspects and what particular next steps could be put in place to support the student. A detailed report is compiled and this is shared with the child's parents, the school's SENCo (Special Education Needs Coordinator) and teacher. Many of the assessors can offer a programme of support for the child, but again this comes at

a cost, which in most cases falls upon the parents to cover and many are unable to afford this cost. It is unfortunate that our system does not provide funding for those students with dyslexia who struggle at school.

The Importance of Repetition:

Dyslexic learners do achieve in time, but the route for them takes a great deal longer than for other learners, they have to work ten times as hard to get to the same place as their peers, and this can make them tired. They require repetition to help them consolidate knowledge and skills in their brains by developing synaptic connections. Research tells us that amylin cements the knowledge into our brains as it insulates and protects the synapsis. This is what helps us to retain knowledge into our memory. The body also prunes synapsis in the brain that it doesn't need and pathways protected with amylin are retained.

Programmes like the Arrowsmith Programme are having great success with cognitive training using high frequency repetition of incremental pathways under several focus areas to ensure knowledge and skills are consolidated into the long term memory, along with making explicit connections to other learning. It is unfortunate that this effective 3-4 year programme prices itself beyond most families and that there are, at this time, only two private schools in Wellington offering the programme.

The Importance of Relationships:

Research tells us that knowledge is stored in the neural pathways, not in the neurons themselves. Therefore, as teachers and parents, we need to add onto a child's neurons, and that is why relationships are so important. As teachers we need to know a child's background in regards to neuron knowledge, to make links to the child's knowledge already developed. Relationships are key to this. Quality relationships are key in fact. Mikare-Wallace, (2017) states this as being the number one factor. If a child is in a class where the teacher scares them or startles them, cortex levels are heightened causing trauma, and we all know that this limits learning. Therefore, a calm, quiet teacher who generally cares about students and develops a close nurturing environment, is best for all students, but especially so for those with dyslexia.

Implications:

Dyslexia is a syndrome of multiple varied reading and non-reading symptoms. Many with dyslexia realise early on in their schooling that they are not learning at the same rate as their peers. Their learning and coordination difficulties often lead to poor self worth, a feeling of being dumb, which can lead to depression and isolation. Yet these big picture thinkers, if allowed to flourish can have a huge positive impact on our

society, therefore it is important that educators help these thinkers to thrive in school so that we can keep them feeling good about themselves and value their contributions. Alternatively many of these people could become a drain on our society, becoming unemployed, drug or alcohol dependent, or get involved in crime.

International dyslexia expert, Neil MacKay (2009), warns that many New Zealand schools unwittingly help to 'create criminals', starting with putting too much emphasis on reading at the expense of thinking and other core skills.

By Prioritising and addressing dyslexia in schools we avoid flow on adult-related expenses from social, mental health and prison services, according to Whitehead (2016). Results from a New Zealand Ministry of Education screening tool trialed in 2008 on 197 prison inmates showed that 90% were not functionally literate and 80% were not functionally numerate. The research looked at dyslexia and although approximately 10% of our NZ population is dyslexic, percentages climb as high as 90% in our prisons according to Dyslexia Foundation.org.NZ, (2017) The report identified that the vulnerability of inmates was due to a number of factors including different degrees of comprehension and social (dis)comfort due to low reading age, limited literacy skills, slower cognitive processing speeds and comprehension, impaired or heightened auditory and visual perception, poor short term memory and variable concentration, reduced ability to understand procedures and follow instructions, inability to comprehend cause and effect, and/or consequences.

What more Can we Do?

Essentially we are asking dyslexic students to cope in a literacy dominated education system, which does not suit their style of learning. Ideally, incorporating more about dyslexia and how to better cater for dyslexics in the classroom, during teacher training would be advantageous for our school system. However, I can only look at the influence that I can have within our school so the following are my recommendations:

- Provide an environment where students are encouraged to achieve at their own pace in order to accelerate their personal learning, ask the student how they work best, and do your best to adopt this approach, and provide regular breaks
- Ensure lessons are quick, fun and to the point, as dyslexics have limited concentration,
- Revise lesson content constantly
- Ensure students experience some success every day, and that these successes contribute to an overall development of their understanding in a range of learning areas.

- Recognise effort as dyslexic students work harder than the average student
- Provide a top down, big picture approach to new learning, which best suits these learners, so that they get the overall idea or meaning first, then fill in the specific details
- Look into the 4D programme and start to use their 'notice and adjust' teaching approach. Monitor the adaptations made to ensure that the impact can be gauged.
- Reduce or adapt homework
- Clearly identify the specific reading problems the individual reader has, then design a reading based programme to develop the skills they have fallen behind in, and repeat activities frequently so that they are deeply embedded, and include audio books in the programme
- Providing a carefully planned, 'hands on' multisensory programme with structure, where visual and auditory learning styles, as well as movement, are key to learning language
- Provide a quality phonics programme at all levels of primary schooling with a strong emphasis in the junior school
- When teaching a new word try to use a visual picture of the word, or get the student to create their own picture of the word, as this will be retained longer in a dyslexic's brain, Mnemonics can also be useful
- Use a strength based curriculum, like passion projects, where students can utilise their skills and extend their knowledge to experience success and realise their extraordinary capabilities
- Use a collaborative approach to learning so that children can support each other using their skills, especially in writing situations where interactive, shared or paired writing activities so those with dyslexia are not impacted by their limitations
- Self esteem plays a huge part in a child's success, confidence will grow from being in an environment where the child does not feel "different" from their peers but accepted for their own qualities
- Teach thinking skills strategies for learners to apply to their own learning e.g. SOLO taxonomy
- Provide assessments that are designed to cause minimal anxiety - careful selection of the right level, provide reader-writer support, break assessments up over 2 or 3 smaller sessions rather than doing so all at once etc.
- Provide opportunities for students to make connections from learning in one context to another
- Allow extra time for dyslexics to complete tasks. Avoid copying tasks.
- Assist them to develop organisational skills

- Where possible utilise digital supports - voice recognition software; word processing; spell checkers; touch typing programmes etc.

Whitehead (2016) says, "That once dyslexia is understood, it is not difficult to see what changes would benefit dyslexic students. Best practice is a fully inclusive learning environment, ensuring that legal rights to a fully inclusive learning environment and accommodations are delivered upon. Best practice comes down to three things - early identification; a 'notice and adjust' teaching approach to accommodate difference and if no improvement, interventions to specifically target problem areas."

Conclusions:

"Dyslexia is a self-compensating disorder that can often be overcome with time, effort, and understanding. Let's change how these learners see themselves in the education system so that they aren't seen as lazy, stupid or retarded, but just as different. Let's give them determination to thrive and flourish in our society, so that everyone benefits from their special skills and talents. The country can't afford to ignore or marginalise its most creative people." Stuff (03-03 2017)

"Those with dyslexia must be supported in education and the workplace, and this often requires specific interventions, as well as awareness and understanding"

Pope-Mayell(2017) As teachers we can certainly ensure our environment allows for these different thinkers, developing a close relationship where you know the students as individuals, including knowledge of how dyslexia affects them in their everyday life, tapping into their preferred learning styles knowing that their preference is based on receiving, processing and presenting information in ways that make more sense to the dyslexic-wired brain. Providing them with options including oral, visual or multi-sensory approaches rather than through written tasks. Using a student led approach to new learning, so that the contexts being studied resonate positively with the dyslexic, and whereby they can bring to the learning their prior knowledge and a desire to learn more. Ensuring the class programme contains problem-solving, creativity and high level conceptualisation, so the dyslexic learner can share their original insights and shine alongside of their peers.

Educators need to ensure that students with dyslexia experience daily successes to keep their self esteem high. It would also be advantageous for teachers to share with their classes that we all learn at different rates, but that we will all get there in the end, as this would help peers have a better understanding of those in their class who learn at

a slower rate. If we can as educators see hope and potential in someone, we can provide for a more pleasant learning experience for them.

Through their innovative thinking, dyslexic thinkers can, and do, contribute to business growth and productivity. Many enlightened employers around the world are actively recruiting dyslexics for the creativity and alternative thinking that they bring to the workplace. Research shows that 35% of US entrepreneurs and 20% of UK entrepreneurs are dyslexic. Entrepreneurs create jobs and wealth, both drive economies forward. (Pope-Mayell,2017) As educators we need to promote these skills within these capable individuals so that our whole community can benefit from them in the future.

Welby Ings(2013) said, “Creativity resides in people who need to look after our thinkers, embrace a variety of ideas - ever conflicting ideas and find good in all of them.” It is therefore up to educators to nurture and grow these creative thinkers and cater for them within the system, but in a way that they can thrive.

Mikare-Wallace (2017), also stated in his presentation to teachers at Aotea College that the Dux of a school goes on to unmemorable things, they are not dynamic in their creativity to change the world, whereas innovators (dyslexics) can change the world.”

My Next Steps:

- To share my findings on dyslexia with the teachers of Discovery School, through a series of staff meetings, to raise the profile of dyslexia within the school
- Encourage teachers to use the ‘notice and adjust’ teaching approach supported by 4D with their student.,
- Devise a system in which teaching adaptations can be monitoring to gauge their impact
- With a greater awareness it is hoped that teachers will have more confidence and skills to identify students who could possibly have dyslexia, and then refer them on for a more formal assessment
- Investigate if there is a programme that could be introduced at Discovery School, which is value for money that could provide a specialised programme for these students
- Continue to encourage quality teaching of phonetics through Joy Allcock’s programme and professional development

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