



Do Current Extension Practices in New Zealand Cater For Farmers with Dyslexia?



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Executive Summary

Farming has always been seen as a career for those who were never any good academically, often ridiculed as 'dumb' many left school as soon as they were able and went farming. Once they became farmers they began to excel, as farming is a practical and hands on career which requires problem solving, a love of the land and little reading and writing. To gain insights on what it is like to be farming with dyslexia I undertook several interviews with farmers throughout New Zealand who were willing to share their story. From these interviews I found that most of them didn't see their dyslexia as a disadvantage but rather an advantage as it enabled them to think differently. Many had found ways to help overcome their dyslexia. There were key themes which came out of the interviews, the main one being that the agricultural sector needs to acknowledge that dyslexia is an issue within the sector, and secondly that dyslexic people are often more creative, entrepreneurial and can see the bigger picture. Often many have the ability to look at risks and mitigate these. All those I interviewed did not see their dyslexia as a bad thing.

Many of us who work in the agricultural industry will know farmers with dyslexia. Many of whom have tried to hide it rather than embrace it. Often these are intelligent individuals, but they struggle with reading and writing and therefore could be classed as a 'functional dyslexic' but some dyslexics are 'literate dyslexic's and will persevere with reading and writing. As a sector we need to change the way they can and do receive information and we now have the technology available to do this.

The research provides the following broad conclusions:

- Reduce the stigma of dyslexia in the agricultural industry by having ambassadors for dyslexia and mentors to assist other farmers with dyslexia
- Conduct research to determine the extent of dyslexia within the agricultural sector
- Develop workshops for rural professionals to educate them about the basics of dyslexia, and how they may be able to better assist their dyslexic clients
- Develop extension resources in dyslexic font
- Develop more podcasts and videos on popular extension topics which don't require dyslexic farmers to have to read to gain the information
- Encourage Regional Council's to provide assistance with compliance paperwork such as drop in days or help desk staff to help dyslexic farmers to complete paperwork required

I acknowledge that it isn't going to be easy for the sector to make the changes required, as for too long this has been a topic which has been almost hidden but at the same time it is acknowledged that many farmers are dyslexic. A change in mindset will take some years to create but I believe we can do this by having an ambassador or ambassadors for dyslexia in the same way we have Doug Avery for rural mental health.

We are in both exciting and changing times in the sector. With increasing compliance and environmental changes being introduced and demands on farmers increasing, we will see some dyslexic farmers despairing and wondering how they will cope with the increase in paperwork which they already struggle with.

Dyslexia is the new stigma in the agricultural sector which needs to be broken. I hope this report helps to both challenge and change the mindset that dyslexia is something which should be embraced not ridiculed. I would love to work in this space and help bring about change in the agricultural sector and make it easier for the next generation of dyslexic farmers coming through.

Acknowledgements:

Firstly I'd like to acknowledge my fellow Kellogg 40 cohort. You are an amazing and incredible group of people from such diverse backgrounds. I've really enjoyed getting to know you and I'm grateful for the time we have spent together during the three phases. I know you'll make outstanding contributions to the New Zealand Primary Sector in the future and I look forward to hearing about your future endeavours.

To my family and friends who have provided me with love, support and positive encouragement throughout this journey. I couldn't have done it without you all. I know that by completing this programme it will undoubtedly shape my future and I'm excited to see what contributions I make to the agricultural sector in the future.

I would like to thank and acknowledge the generous scholarship from the Waikato Farmers Trust which assisted with my course fees. Thank you for believing in me and thank you to Andrew McGiven who encouraged me to apply for the scholarship.

I would like to thank and acknowledge the support from my employer Asure Quality who have given me the time off to complete the Kellogg Rural Leadership Programme, during what has been a busy year for the Mycoplasma Bovis eradication programme. To my colleagues who have filled in for me while I've been away I'm most grateful to you for helping my farmers during my absence and I've enjoyed sharing my learnings and experiences with you after each phase.

I am immensely grateful to the professionals and rural professionals who have generously given up their time and expertise and chatted openly and honestly about their work and how it how it contributes to helping farmers with dyslexia. I'd especially like to thank the farmers with dyslexia who I have interviewed as part of this project. The honesty and frankness you shared during your interviews has given me such valuable insights as to what it is like to be dyslexic, and the challenges you have faced. Without you this research report wouldn't be possible. I am most grateful to everyone I interviewed who provided me with links and resources to look at which might help me or which provided additional insights into being dyslexic.

To the New Zealand Rural Leadership Trust who administer the Kellogg Rural Leadership course. Thank you for recognising the importance of growing capability in the primary sector. Words cannot describe how excited I was to be accepted onto the programme. I have benefited enormously in both my personal and professional development from being on the course. In particular I'd like to thank those who make it all happen: Dr Scott Champion who has continually challenged our thinking and made us ask why and how we might be able to make change within the industry. I have also really enjoyed the monthly conference calls to check how we're progressing. Dr Patrick Aldwell for your wisdom and support to help me to complete the research project. This has been an incredibly broad topic and you've helped me make it manageable. You're only ever a phone call or email away and have been more than happy to provide guidance at every stage of the process. Lisa Rogers and Anne Hindson who have done a fantastic job of planning the course and ensuring everything runs smoothly. We have had access to some truly incredible and highly regarded professionals during the course.

Finally I'd like to thank the Kellogg Programme investing partners for their continued support of the programme.

Introduction:

Dyslexia is an alternative or atypical way of thinking and it can occur across a range of intellectual abilities. It affects up to 10 percent of New Zealand's population, but there may be an additional 10 percent of the population in the agricultural sector who are also affected by dyslexia. It is often first recognised in schools when a student has difficulty with spelling and writing. However it can often go undiagnosed and individuals will be labelled as struggling or slow due to not developing reading and writing skills. It is also worth noting that dyslexia affects more males than females. As you will see from my case studies they were all male as I struggled to find any farming ladies with dyslexia.

Whilst researching this project I came across the following quote from Albert Einstein:

"Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid."

This to me sums up how many farmers in the agricultural sector feel about their dyslexia and how they were treated at school.

However much like mental health, dyslexia is a stigma in the farming community, yet it shouldn't be. Dyslexics can offer so much to a farming team, they are great creative thinkers and perceive risk better than those without dyslexia. As an industry we need to do more to acknowledge and promote that dyslexia is a gift that should be embraced and utilised. We shouldn't label those with dyslexia as dumb and that's the reason they go into farming.

With more and more environmental regulations being imposed on farmers and an ever increasing amount of paper work that comes with increased regulation, this can further marginalise dyslexics who struggle with filling in forms. It can leave many asking "Are these forms going to affect my business?" if the answer is no then they'll leave them which may later see them becoming non-compliant through a lack of understanding and inability to complete the paperwork required.

As part of this research I have provided a background to the current extension methods used in New Zealand by the two main industry bodies.

My motivation for choosing this topic is that I spent two years as the Environment Extension Manager for the North Island at Beef + Lamb New Zealand. During this time I ran many extension events in the form of workshops and field days. It often intrigued me that at some events you could take numerous resources and they'd all disappear and at other events you could take the resources and you'd be lucky if one was taken. This got me thinking, of those who take them, how many actually take them home and read them? If no one is taking them can no-one actually read them? It was during my time at Beef + Lamb that the organisation started producing videos and podcasts for farmers to watch and listen to. The uptake of these was phenomenal and this also got me thinking that these videos and podcasts were a way for farmers who struggle with reading to get the information that they require. Along with not having to take time off farm to attend events. It was also during this time that I discovered a couple of my farming friends had dyslexia.

I have thoroughly enjoyed researching and writing this project. I have learnt so much about dyslexia and the alternative style of thinking that comes with it. I would love to work with the two industry bodies (DairyNZ and Beef + Lamb New Zealand) to help them develop dyslexic friendly resources and I feel that this can be easily achieved. I hope that we can break down the stigma of dyslexia in the rural community and have ambassadors for dyslexia in the same way that Doug Avery is an ambassador for mental health.

Aim:

In this research I am looking at whether current extension methods in the agricultural sector cater for farmers with dyslexia. Thus the aim of this study is to gain a better understanding of what is dyslexia, what are the current extension practices in New Zealand used by the two main industry bodies and finally developing recommendations so we as a primary sector can best support farmers with dyslexia to encourage them to reach their full farming potential.

Methodology:

The research used for this report involved a literature review, critical analysis and several interviews with dyslexic farmers and rural professionals who have an understanding of dyslexia or who work in this space.

The literature review was a large component of the research, and during this review I explored what is dyslexia and what are its common characteristics. I also watched several Ted Talks. These enabled me to gain some different perspectives on dyslexia, and what is like to live with dyslexia from a non-farming perspective. These videos also provided me with insights into some of the advantages that dyslexics have over those without dyslexia. I also wanted to learn more about the Dyslexie Font and how it can help those who are affected by dyslexia.

The farmers I interviewed were given to me via word of mouth through industry contacts and I approached the farmers directly to see if they would be happy to be interviewed as part of my research project. All of the interviews were conducted over the phone. The majority of the interviews lasted between 30 to 90 minutes following a set question format, however I allowed the farmers interviewed to speak frankly about their experiences and I was happy to allow for deviation from my questions as this deviation might provide me with valuable insights. The aim of these interviews was to build a picture of what it is like to farm with dyslexia and what the farmers would like to see the industry do to support them better. The farmers I interviewed were from all over New Zealand and were a variety of ages and at different stages of their farming careers. They were also all male as dyslexia predominately affects males.

The key focus of the farmer interviews was to find out more about their experiences with dyslexia and how the primary sector could best support them and other farmers with dyslexia going forward. From these interviews I was able to pull out key recommendations for the primary sector on how we can best help farmers with dyslexia going forward. The questions used in this interview can be found as an appendix at the back of this report.

Everyone I interviewed was happy to be named as part of this report, so I have chosen to write up the interviews as case studies to highlight each individual's strengths and challenges, but to also highlight how they have overcome some of these challenges to get to where they are today. It is worth noting that the farmers I have interviewed as part of this research are all classed as 'high performing or successful farmers'. I would have liked to speak to farmers who have struggled with their dyslexia, but due to time constraints and I wasn't able to search out these farmers.

I also took advantage of access to professionals working in the dyslexia space to gain an understanding of the support services available for dyslexics in New Zealand.

The final part of this report was the analysis. To do this I used Thematic Analysis which I applied to the interview transcripts to enable me to analyse the interview content by question and search for themes that had arisen from the interviews. Using this method enabled me to gain a much more thorough understanding of the topic and relate some of the findings from the interviews back to findings from

the literature review. This research report is not representative of the agricultural community as a whole and their experiences of dyslexia. I feel that there are many farmers out there who struggle and feel shamed or embarrassed daily with their dyslexia and do their best to hide it from family and friends. In essence this research project has been about providing a window into dyslexia in the farming community and providing a snapshot in time of dyslexia in the agricultural community and how we might be able to break down some of the barriers around dyslexia and how we might be able to help them going forward.

Thematic Analysis

At the conclusion of all of the interviews I was able to highlight some key traits of dyslexia which matched my research findings. This was useful for understanding how dyslexia affects different individuals, but to also understand that some individuals are functional dyslexics whereas some are not.

It was interesting to note that those I interviewed all had similar suggestions on how the agricultural sector could make improvements for those with dyslexia.

Some of the key themes which came out of the interviews were:

- The stigma of dyslexia in the agricultural sector
- Providing help for dyslexics such as mentors
- Lack of support for dyslexics currently
- Dyslexics think differently and this should be considered an advantage
- Tools available to help those with dyslexia

From my interviews I was able to pull out an extensive list of ideas and suggestions and these formed the basis for the recommendations for this report. I was then to use these themes to help shape the recommendations.

I was able to use the interviews as case studies which I felt gave my report a new dimension, as it described both the advantages and challenges of dyslexia from an individual perspective. It also shows how the characteristics of dyslexia play out.

1.0 Defining Extension and Dyslexia:

1.1 Extension in New Zealand, A brief Overview

Extension practices in New Zealand have changed and evolved over time. Up until the 1980s the provision of extension activity was made possible by the former Ministry of Agriculture and Fisheries (MAF). MAF provided extension services as a public good (Payne et. al., 2016 in Sewell et.al., 2017). As a result of the governments neo-liberal reforms in the mid-1980s, extension services changed to being commercialised and then privatised (Botha et. al., 2006 in Sewell et.al., 2017). As a result, the government no longer had to provide extension to farmers and the provision of extension was transferred to farmer-funded producer organisations such as DairyNZ (formerly Dexcel and Dairy InSight) and Beef + Lamb New Zealand (formerly Meat and Wool New Zealand). Some extension was provided by private providers such as consultants. Prior to the creation of DairyNZ, extension services were provided by the former New Zealand Dairy Board via industry funded Consultancy Officers from Livestock Improvement Advisory. This was the consultancy arm of the Livestock Improvement Corporation (LIC). This later evolved to become Dexcel and in 2007 Dexcel and Dairy InSight were merged in November 2007 to form DairyNZ.

The further fragmentation of New Zealand's extension system created several problems. As although private consultants play an important role in providing knowledge transfer to farmers, the scientists lack the skills to do this, therefore consultants working in the pastoral sector had poor linkages to the research, development and extension system (Botha et. al., 2006 in Sewell et.al., 2017). To further complicate things, New Zealand's model of extension has traditionally been a science driven, linear, technology transfer orientated model. (Turner et. al., 2016 in Sewell et.al., 2017). These models no longer fit with a new generation of farmers who are focussed on innovation and the many different and diverse farming systems. The adoption of agricultural innovations by farmers is argued to be of prime importance for improving the productivity, profitability and sustainability of their farms (Wheeler et. al., 2016 in Sewell et. al., 2017). Therefore, New Zealand's agricultural extension models need to continually evolve to meet the needs of a new generation of farmers who are hungry for new knowledge and ideas. Farmers need to continually validate their existing knowledge by having an actual outcome from the implementation of an existing management practice match their expectations for a farming situation (Gray et.al., 2003). Farmers look to see where their knowledge may be invalid thus creating a knowledge gap. Once this knowledge gap is identified they look to how best to fill the gap and this is where extension activity comes in (Gray et.al., 2003).

DairyNZ is the main provider of extension activity for dairy farmers in New Zealand. DairyNZ has a network of Consulting Officers (COs) located in the main dairying regions of New Zealand. The Consulting Officer's main role is to provide farmer education through mass extension activities which include farmer discussion groups, workshops, field days, seminars and other training events. The services provided by the COs are industry funded through milk levy's, are available to all dairy farmers, including dairy farm workers, not just farm owners, along with rural industry professionals. Consulting Officers will spend up to 45% to 50% of their time facilitating approximately 400 discussion groups located throughout the dairying regions of New Zealand. (Murcott 1995 as cited in Sherson, Gray, Reid and Gardner 2000; Sherson 2000 in Sherson et.al., 2000). These discussion groups are highly valued by dairy farmers and provide the farmers with a unique source of practical information. Discussion groups are held in the various dairying districts and farmers from this district will come together for between 3 to 5 hours, usually once a month for 7 to 10 months each year (Murcott 1995 as cited in Sherson, Gray, Reid and Gardner 2000; Sherson 2000 in Sherson et.al., 2000). There is no set membership to attend the groups and therefore membership is open and voluntary with members able to attend as and when they choose to. Group numbers can vary from 6 to 50 people at a time (Sherson 2000 as cited in Sherson et.al., 2000) and may also be attended by rural professionals such

as rural bankers, rural supplies technical field representatives and farm consultants. These groups provide networking opportunities for both farmers and rural professionals.

The discussion groups are normally held on a member of the discussion group's dairy farm, but events may also be held in local halls during the winter months, particularly close to the start or end of calving or the changeover to the new dairy season. This is when the Consulting Officer typically runs a BBQ or dinner event providing opportunities for farmers to get off farm and meet or catch up with other farmers in the area. At a discussion group the host farmer usually presents a challenge or issue for their farm that they would like the attendees to help them solve, examples might include what are the benefits of switching to once a day milking? Or is installing an in-shed feeder the best fit for my farming system? The host farmer will usually provide some facts and figures about their farm business to provide the attendees some context for the problem they are trying to solve. A different farm is visited for each discussion group.

In contrast Beef + Lamb New Zealand (B+LNZ) run a different extension model to that of DairyNZ. With less levy payers funding the organisation they are unable to run numerous discussion groups throughout the country. Instead B+LNZ run field days and workshops in the different regions. The field days are run at a host farm and focus on a particular topic or theme such as improving hill country pastures or it might be a monitor farm project update. These field days will often have 100 to 200 farmers and rural professionals in attendance. In contrast workshops are specialised seminars which aim to upskill farmers on a topic and usually have a practical element to them, such as a work book to fill in. Topics may include: developing a Farm Environment Plan for your farm, Wormwise: learning about parasites in your stock, Health and Safety. The workshops are run by an experienced facilitator with specialist knowledge of the subject.

In the past two years B+LNZ have added additional tools to their extension programmes. They have developed a range of online learning tools as part of their 'Knowledge Hub' on their website. Included in the Knowledge Hub are PDF's, fact sheets, Resource Books all available to download along with videos and pod casts.

Aaron Mickle Beef + Lamb New Zealand's Product Development Manager was able to provide me with some statistics on the uptake of online resources from the website:

Over the past few years B+LNZ have tried to have more exclusive ways of communicating with their farmers, they have been using text messaging, social media including Facebook and YouTube, videos and podcasts and have had good uptake across all of these formats.

After launching these methods of communication B+LNZ have found that 44% of the farmers who are part of the AgPest text message service had not been to a B+LNZ event in the previous two years and only 23% of those who receive the text messages had been to one event. Therefore only 67% of those who receive the AgPest text messages rarely or never come to events.

While there will be many reasons for this, dyslexia or literacy/numeracy issues will be some of the key reasons for not attending. These other methods of extension/agricultural communication are showing high levels of engagement and is this due to the fact they cater better for dyslexics and those who struggle with literacy issues. On the other hand it means that those farmers who are embarrassed about their dyslexia may be put off from attending a workshop or field day as they may be anxious they may have to read something or it may become obvious to others that they have dyslexia as they may be trying to hide it from their peers. These other methods of extension and communication enable them to get the information they require from the privacy and comfort of their home without having to travel to an event.

It is widely acknowledged and was often stated during my time at Beef + Lamb New Zealand that farmers learn best from other farmers. Therefore it's a shame that many farmers chose not to attend extension events, thus missing out on valuable information that may be able to help them in their farming business. It is also acknowledged that many behaviour change practices happen through conversations, these can be during an extension event, over the fence, during a workshop or field day or in the car driving home after the workshop or field day.

Aaron was also able to point out that 40-60% of employees do not have the literacy or numeracy skills to do their jobs effectively and that the Rural Youth and Adult Literacy Trust has identified that 11.8% of rural adults "have such low literacy levels they struggle with the literacy needs of everyday life". More information will be provided further in this report on the Rural Youth and Adult Literacy Trust and what they do, and how they can help those in the rural community who struggle with literacy issues.

As part of our correspondence Aaron provided me with an interesting fact, that 35-50% of adults are introverts. Farming is known as a solitary occupation which therefore would appeal to many introverts and especially those who are embarrassed about their dyslexia.

2.0 What is Dyslexia?

Dyslexia in New Zealand is very common and it affects an estimated one in ten New Zealanders, including 70,000 school children (DFNZ 2019). It can be best thought of as a continuum of abilities and difficulties as it occurs across a range of intellectual abilities and has no clear cut off points (DFNZ 2019).

The dyslexia foundation of New Zealand defines dyslexia as:

"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".

Constitutional in origin refers to the fact that dyslexia has a substantive neurobiological basis. (DFNZ 2019). Brain research has shown that dyslexic people use the right hand or pictorial side of their brain, which makes them slower to process and understand language, but storing in creative areas like problem solving, empathy and lateral thinking. In contrast those without dyslexia tend to use the 'verbal' left side of the brain to understand words. (DFNZ 2019).

The Yale Centre for Dyslexia and Creativity defines dyslexia as:

"Dyslexia is an unexpected difficulty in learning to read. Dyslexia takes away an individual's ability to read quickly and automatically, and to retrieve spoken words easily, but it does not dampen one's creativity and ingenuity".

Dyslexic people tend to be top-down as opposed to bottom up thinkers, which means that they learn from getting the big picture or the overall meaning first, and then will fill in the specific details (DFNZ 2019). Dr Sally Shaywitz who founded the Yale Centre for Dyslexia and Creativity identifies that dyslexics have a range of strengths in their higher level thinking processes. These are:

- Higher learning capacity
- Exceptional empathy
- Noticeable excellence when focussed on highly specialised areas such as medicine and law
- Often high level conceptualisers who manifest "out of the box thinking" and they will often provide new insights

The Dyslexia Foundation recognises that dyslexia is usually discovered in a classroom environment when core reading and writing skills are being taught to students. Often dyslexia is left undiagnosed and the individuals are labelled as 'struggling' or 'slow' due to their unexpected difficulties in acquiring these skills. Once a dyslexic individual moves into the workforce these difficulties can be compounded due to the reliance on written formats and requirements for everything from email communication to understanding instructions. Even manual jobs can be difficult and frustrating as there are often forms to fill in (DFNZ 2019).

Dyslexia shouldn't be seen as a negative condition and dyslexics can in fact have other gifts. Not every dyslexic displays every one of these gifts but most dyslexics all have certain mental functions in common. Below are the eight basic abilities that all dyslexics share:

1. They can utilise the brains ability to alter and create perceptions (the primary ability)
2. They are highly aware of the environment
3. They are more curious than average
4. They think mainly in pictures instead of words
5. They are highly intuitive and insightful
6. They think and perceive multi-dimensionally (using all the senses)
7. They experience thought as reality
8. They have vivid imaginations

(Source: <https://www.dyslexia.com/about-dyslexia/dyslexic-talents/dyslexia-8-basic-abilities/>)

3.0 Signs of Dyslexia

The Dyslexia Foundation of New Zealand acknowledges that there are many signs of dyslexia and it can have great impacts on everyday life. The common signs of dyslexia can include:

- Letters or numbers are reversed or confused such as b/d p/q n/u and 13/31
- Problems with labels, rhymes and sequences
- Being slower to process and needing repeated exposures to retain learning
- Retrieval issues – learns something one moment and gone the next
- Large gap between oral and written capabilities
- Poor sense of direction and difficulty telling left from right
- Reluctance, embarrassment or avoidance around reading out loud
- A preference for face to face meetings and phone calls rather than email correspondence and for charts/graphs over text
- Frequent misspelling of words and mixing up words which sound similar (recession/reception) in speech or in written work
- Poor handwriting, punctuation and grammar
- Misunderstands or misinterprets instructions from a manager
- Fine motor coordination may be problematic for example tying shoe laces or doing up buttons
- Problems meeting deadlines despite working hard

Most dyslexics will exhibit at least ten of the traits and behaviours of dyslexia. One thing which is important to know about dyslexics is their inconsistency.

Some other traits and behaviours of dyslexia include:

- They appear bright and highly intelligent and articulate but they are unable to read, write or spell at grade level

- They are often labelled lazy, dumb, careless and immature and told that they are not trying hard enough or that they have a behaviour problem
- They can have difficulty maintaining attention and may appear hyper or be a daydreamer
- Employed in a position or job that will hide difficulties or not require dealing with problematic areas
- Thrives in careers where visual-spatial/kinaesthetic talents can be realised for example – entrepreneurs engineers, trades, business executives to name a few
- Becomes frustrated at 'planning meetings' and sequential tasks as they already have the answer and how to do it
- Out of the box thinker
- Learns best through hands-on experience, demonstrations, experimentation, observation and visual aids
- Misspeaks, misuses or mispronounces words without realising it
- Difficulty remembering verbal instructions or directions
- Will commonly perceive that they read better silently
- Frequently has to re-read sentences in order to comprehend
- Fatigues or becomes bored quickly while reading
- Places reliance on others for written correspondence
- Uncertainty with words, punctuation and spelling when writing. Reliance on spell-check and grammar-check
- Poor handwriting which masks spelling mistakes
- Writes with all capital letters or mixes capital letters within words
- Difficulty with left and right or North, South, East and West
- Low self esteem
- May understand higher math, but cannot show it on paper
- May excel at maths but may still rely on tricks for remembering math facts
- They spell phonetically and inconsistently
- Reading or writing shows repetitions, additions, transpositions, omissions, substitutions and reversals in letters, numbers and/or words
- They may have difficulty putting thoughts into words and may speak in halting phrases and may leave sentences incomplete or stutter under stress, may mispronounce long words or transposes phrases, words and syllables when speaking
- They have trouble with writing or copying and their pencil grip is unusual, the handwriting varies or is illegible
- Has difficulty telling the time and managing time
- Excellent long term memory for experiences, locations and faces

Dyslexia is also a highly heritable trait being 54 to 75% heritable.

One of the key traits of dyslexia is having difficulty with reading. The following diagram shows the differences in the brain for dyslexic readers and non-dyslexic readers.

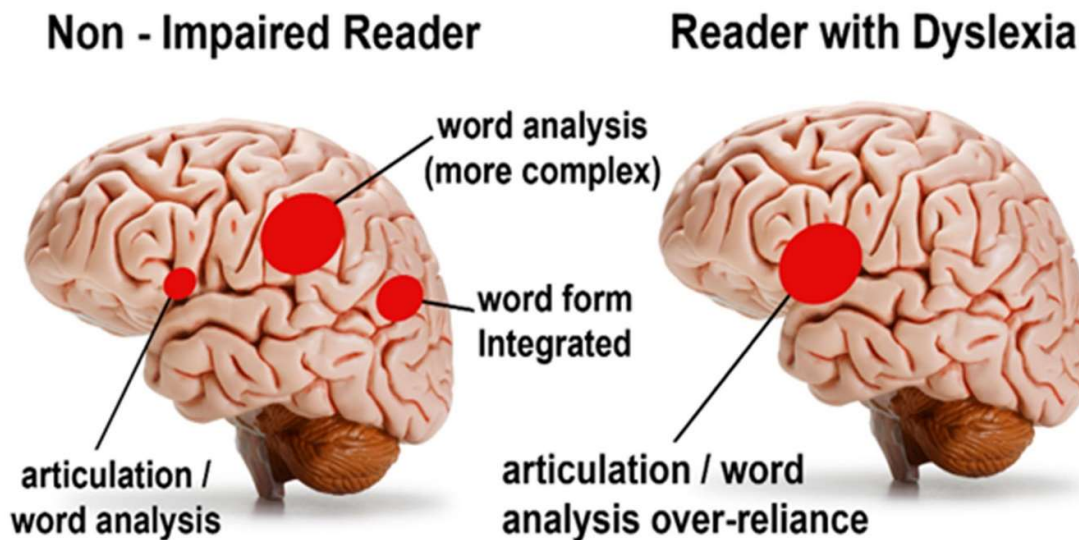


Diagram 1: Comparing the reading brain for those with dyslexia and those without

Source: <http://cognitive.com.sg/wp-content/uploads/2018/11/brain.jpg>

4.0 Famous Dyslexics

Dyslexia should not be seen as a barrier and in fact some of the most successful people in both New Zealand and overseas are in fact dyslexic. Famous New Zealand dyslexics include:

- John Britten
- Sir Richard Taylor
- Sir Peter Leitch
- Sir William Hamilton

Some famous dyslexics include:

- Sir Richard Branson
- Walt Disney
- Tom Cruise
- Keira Knightley
- Leonardo da Vinci
- Jennifer Aniston
- Steve Jobs
- Jamie Oliver

It is also worth noting that in the US, 30% of all entrepreneurs are dyslexic and 20% of all UK entrepreneurs are dyslexic.

5.0 Tools and Support Available for Farmers with Dyslexia

5.1 Rural Youth and Adult Literacy Trust

This was previously known as the Adult Literacy Rural Trust. The Trust was started in 2011 at a kitchen table in Port Waikato. It was started as Josephine Poland who is one of the trustees was approached by a local woman in Port Waikato who asked Josephine if she would help her to improve her literacy. Josephine worked with this lady for three months, who during this time significantly improved her reading ability. Following on from this the trust was formed as it recognised the unmet need for daily literacy lessons for adults living in isolated rural was a nationwide issue and needed a nationwide effort to address it,

The aim of the trust is to provide training in literacy for isolated rural adults and teenagers. The Trust is based in Port Waikato and is staffed by volunteer coaches who work with a student between 3 to 5 days a week for 30 minutes a day and will work with them via phone, mail or video conference. Students who are being assisted by the Trust are able to access online practice software if they have computer and internet access or are able to utilise a library computer. The Trust also runs school holiday Catchup Literacy Camps for high school students who want to improve their literacy skills.

The Trust has found that video-conferencing is a highly effective method for teaching literacy, and it is also fun for both the tutors and learners. It is also the only way that the volunteer coaches can be trained as they live all around New Zealand. The phone is also one of the best technologies for training too.

I approached the trust in the early stages of my project to see if I could get some information from them on how many dyslexics they worked with, and how they could help dyslexics but I did not receive a reply to the email that I sent.

5.2 Primary ITO

Primary ITO is New Zealand's agricultural vocational training organisation. I spoke to Mike Styles who is a researcher and practitioner in dyslexia and who has worked as a numeracy and literacy manager at Primary ITO with a focus on dyslexia. Mike acknowledges that 20% or more of those who work in the primary sector as dyslexic, as people often migrate to sectors where they can succeed in spite of their dyslexia.

Primary ITO has developed a tool which helps to identify any trainees who have dyslexia and as part of this they have a wraparound support package for dyslexics which they have found makes a huge difference to trainees learning. Some trainees will self-identify that they have dyslexia, otherwise parents or tutors may identify that they are dyslexic. The tool that Primary ITO use to screen all trainees is called DAST, this is the Pearson Dyslexia Adult Screening Tool. It is a screening tool so it won't provide a full diagnosis for dyslexia. The tool takes an hour to run, but it is not as comprehensive as a full assessment or diagnosis for dyslexia.

5.3 Resource Teaching and Learning Behaviour (In Schools)

The Resource Teaching and Learning Behaviour (RTLb) service is run by the Ministry of Education. They are funded to work together with schools and teachers to support the achievement of students in years 1 to 10 who have learning and/or behaviour difficulties. The service has a particular focus on working to support Maori and Pasifika students, along with children and young people moving into

state care. The RTLB also works to support and up-skill teachers to better meet the needs of students within an inclusive education system.

The service was started in 1999 after a policy shift in 1996 and 1997 signalled that the RTLB should be developed from the Guidance Learning Unit (GLU) teachers and the Resource Teachers of Special Needs (RTSN) and new positions would also be created. As part of these changes special classes were disestablished.

To ensure consistency throughout the country with regards to service provision, each of the 40 clusters within the RTLB have a lead school. This lead school is the fund holder and this school's Board of Trustees (BOT) is the sole employer for cluster managers, practice leaders and the RTLB in a cluster. Although all RTLB in one cluster will be employed by the lead school's BOT, they may be located at other schools within the cluster area. The schools where RTLB are located, but not employed, are host schools.

Schools are able to request the RTLB service to support them to meet the needs of students who are experiencing learning and behaviour difficulties. If a family or whānau feels their child may benefit from additional support they can talk to their child's classroom teacher to discuss the options around the school making a request to have RTLB support. The RTLB service operates clusters within each region (A cluster is a regional group of RTLB) and each cluster has its own processes for managing requests for support.

Each region's RTLB work as a cluster or team with the workload for that cluster managed for a cluster manager. The RTLB works to support schools to meet the behaviour and learning challenges of students in the cluster. They do this through:

- networking
- school policy development
- working with teachers to meet needs in the classroom
- initiatives such as peer reading
- supporting individual student needs, for example facilitating the generation of Individual Education Plans (IEP).

When they work in school or secondary school settings, the RTLB support the learning and behaviour needs of students through negotiation with a range of people. These may include:

- the class teacher
- Special Education Needs Coordinators (SENCO)
- parents
- Whānau/families.

I met with Alex Ball who is an RTLB in Cambridge in the Waikato to find out more information about the service. Alex is a trained teacher and prior to becoming an RTLB was a PE teacher and a Dean at Matamata College. Alex is also dyslexic.

One of the key things I was keen to learn from the conversation is what support services are available in schools for students with dyslexia but also how do you get a formal diagnosis for dyslexia if you suspect a student has dyslexia?

Alex explained it is hard to get a formal diagnosis for dyslexia through a school and a parent is best to go to a private agency to get a diagnosis.

He went on to explain that there are tips and tricks which teachers can use to help students with dyslexia, these include: coloured paper, literacy workbooks and highlighting lines.

Key things which can help students with dyslexia are the way that a teacher talks to the student as the student may feel anxious about their dyslexia, also working in small groups and peer support can also work well. Internal based courses which don't put pressure on a student. Changing the way assessments are done can really help a student such as doing online or verbal assessments which are easier for dyslexics as they do not involve so much reading or writing. Alternatively providing extra time can take some pressure off a dyslexic student.

Overall a teacher should focus on what a child can do and provide positive support and encourage the child's strengths as dyslexics don't need fixing.

6.0 VARK Learning Styles

VARK learning styles were developed in 1987 by Neil Fleming in Christchurch. VARK helps people to understand each other and assist them to learn more effectively in many situations.

There are four learning preferences in the VARK model. These are:

Visual

Aural

Reading/Writing

Kinesthetic

These will now be described in more detail below:

Visual (V)

In this preference for learning the learner prefers information depicted in maps and diagrams, charts, flow charts and labelled diagrams and the symbolic arrows, circles and hierarchies that represent what would have been presented in words. This style of learning could also be described as graphic. It must be noted that this style of learning does not include photos, movies, videos or Power Point presentations. It does also include designs, whitespace shapes and patterns.

Aural/Auditory (A)

This style of learning describes a preference for learning information that is “heard or spoken”. Someone who has this as their main learning preference learns best from lectures and group discussions, radio, email, talking on the phone, speaking and web based chats along with talking things through. Email is included as it is often written in a chat style with a lot of abbreviations and colloquialism and non-formal language. This learning preference also includes talking to oneself and talking out loud. People for who this is their main learning preference would prefer to sort things out by speaking first to sort out their ideas. They often learning through repeating things to themselves or saying it out loud.

Reading/Writing (R)

In this style of learning a learner has a preference for information which is displayed as words. This style the preference is for text based input and output and reading and writing in all forms such as reports, essays and assignments. These people like lists, diaries, quotations and lots of words. They also like PowerPoint and the internet as they are seldom auditory element.

Kinaesthetic (K)

For this style of learning, a learner has a preference for the use of experience and practice (simulated or real) such as case studies, practice and applications. A key part of this style of learning is can it be grasped, held, tasted or felt? Learners have a strong preference to learn from the experiences of doing something. It is important to note that learners who prefer this style of learning are connected to reality by concrete personal experiences, examples, practice or simulations.

It is worth noting that many people are multi modal learners and have a preference for two of the learning styles, these learners are described as multi-modal.

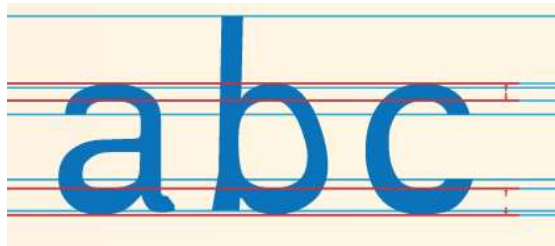
7.0 DYSLEXIE Font

The Dyslexie Font was specially designed for people who have dyslexia and its purpose was to make reading much more fun and easier. Readability and dyslexia's specific characteristics were used as the guidelines for the design. When the font was being designed all of the basic typography rules and standards were ignored.

Dyslexics have several common reading errors which include letter swapping, mirroring, and blending letters together. The dyslexic font was designed so that each letter is individually shaped which eliminates the common reading errors of dyslexia. The font is very innovative and thus makes reading easier for people with dyslexia. It can also be of benefit to non-dyslexics as well.

There are ten main features of the Dyslexie Font:

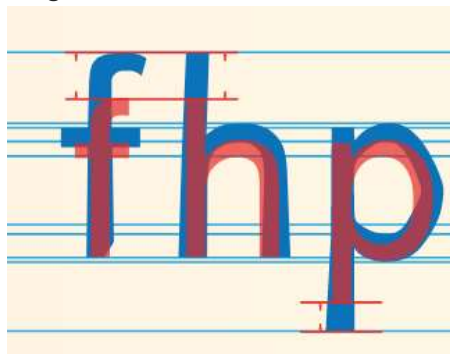
- Heavy bottom



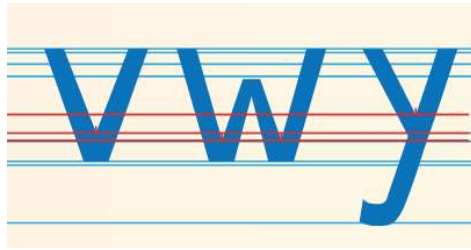
- Inclined letters
- Enlarged openings



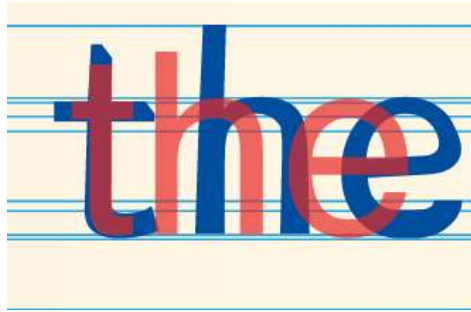
- Other shapes
- Longer sticks



- Capital letters and punctuation
- Various heights



- Higher X-height
- Better spacing



Here is an example of the Dyslexie Font, Dyslexie font for adults, regular size 10:

Pluto is the largest known object in the Kuiper belt, the largest and second-most massive known dwarf planet in the Solar System and the ninth largest and tenth-most massive known object directly orbiting the Sun.

8.0 Interview with Andrew Wark, Sustainable Agricultural Advisor, Waikato Regional Council

As part of my research project I wanted to interview someone at my local Regional Council to explore further what extension methods the Council uses to engage with farmers. As Regional Councils are one of the many organisations who carry out extension activities for farmers. These are usually focussed around environmental initiatives. I also wanted to explore further the idea of dyslexia being a reason for non-compliance. Below is a summary of my interview with Andrew Wark, Sustainable Agriculture Advisor.

Waikato Regional Council's current extension methods:

Land Management Advisory Services Engagement approaches

- Workshops*
- Field days*
- Individual meetings*
- Drop in days*
- Media both print and social
- Attending sector meetings e.g DairyNZ discussion groups, and Beef + Lamb organised events, Owl Farm open days.

Do you feel that these extension methods cater for dyslexic farmers who may struggle with reading and writing?

Those marked with an * are targeted to cater for those farmers with dyslexia and who are illiterate but the Council tries to ensure that these are not the sole reasons.

The workshops that WRC runs are very hands on and encompass look, touch, feel and they also include visual identification such as photos which show environmental risks and mitigations and these are included as part of Farm Environment Plan workshops.

Andrew mentioned that there are a few clues that farmers may give which indicate that they might be dyslexic such as:

- Saying I forgot my reading glasses
- Getting the facilitator or a WRC staff member to fill out details on a form

Being aware of these signs and knowing what some of the avoidance tactics might be.

At present WRC doesn't make any video clips due to budget restrictions but would be interested in doing YouTube clips or collaborating with another organisation such as Beef + Lamb to produce video clips. There are certain digital tools that the council uses but these are not used extensively. One of the main digital tools that the council uses is the Farm Menus which has an interactive tool which farmers can use.

The reach of the internet is another reason that WRC hasn't produced any videos to date and to add to this the reliability of internet connections for drystock farmers can vary. The ability to access the digital platform can be an issue for many farmers as many older farmers aren't very computer savvy.

Andrew would acknowledge that all the events marked with a * cater to dyslexics but they are all targeted so that they are not a structured writing event. They have to be careful that they cater these events for the dyslexics and the illiterate but they are also careful that they cater events for a wide cross section of the farming community.

Andrew hasn't personally come across any examples where dyslexia may have been a factor in a farmer's non-compliance. However he feels certain that there could be some out there and he would imagine that illiteracy would be a bigger problem, but sometimes the two are closely linked. He would go one step further to push this back on the individual farmer and ask "Is this limiting my ability to achieve?"

Do you think that the paperwork was an issue for the farmer?

Farmers for the past 30 years have been required to complete paperwork and managed, however the increase in requirements may have created a greater problem, and Andrew personally believes that it might be comprehension of the rules and regulations rather than the filling out of actual forms. The general environment of farming is changing and as part of that environmental regulations have increased and so has the volume of paperwork required which has created issues. This paperwork is not just for environmental regulations but also for Health and Safety, GST and farmers need to have an increasing comprehension of all of this paperwork but also the legal jargon that comes with it and what this means for them and their individual farming business/es. Should an individual farmer have to read the plan change and using the example of Waikato Regional Council's Healthy Rivers Plan Change, to understand how it will impact on their farming business and the implications it might have for that farming business.

Andrew noted that there is becoming an increasing disconnect between bureaucracy and the end use. Do we always tell the farmer what to do? Which is what we've done for the last fifty years. "You will do this!" Regulation can change behaviours to get to a certain point.

We're telling farmers what to do and they have built up asset bases, sometimes significant asset bases.

Profits are getting harder as farmers are fixed at each end with prices they have a small window and small margins to work with.

Farmers are now only becoming aware of the rules. WRC helps farmers by showing them photos of good examples of environmental compliance and bad examples of environmental compliance.

Drystock farmers don't understand risks and mitigations. Having photos to help them understand the messages they council is trying to convey gives them something to look at, think about and discuss in pairs or groups and rather than being preached at or having to do a task.

Industry professionals have also been contracted as independents to deliver risk and mitigation workshops. Bringing in these different professionals gives a different angle for the messages the council is trying to get across. The council would like to use this approach with dairy farmers and will discuss this concept with DairyNZ.

Andrew raised the point that computer work may be a factor in non-compliance as we now have a big reliance on computers in the digital age. We are now coming across a lot of 'digital illiteracy' and also finding that access to the digital platform can be a challenge for older farmers and reliable broadband internet access is an issue for farmers in general. The question would have to be put to drystock farmers "What is their internet service like?"

Submitting forms for consent digitally is easy for the council to request but isn't easy for the farmer due to the issues mentioned above. How would WRC handle paperwork if this was a farmer's only option?

9.0 Case Studies of New Zealand Farmers Affected by Dyslexia

9.1 Logan Wallace – Sheep and Beef Farmer and 2018 FMG Young Farmer of the Year - Otago

Logan is a sheep and beef farmer in Otago working on his family farm. In 2018 he was the winner of the FMG Young Farmer of the Year competition and Logan is also a member of the Pomahaka Catchment Group and is passionate about environmental initiatives.

Logan had learning difficulties at primary school and aged nine he changed primary school where it was discovered that he was four years behind at spelling. He then had to undergo some intensive catch up and had additional tuition at Kip McGrath. He undertook the tests for dyslexia however they stated he did not have dyslexia as he passed the test with 51%, however mid-way through high school the conclusion was reached that he did in fact have dyslexia. He says he can sit and struggle with spelling and writing but is good at maths and science. Logan says he can have a picture and a plan in his head and then go ahead and build it. He is very slow at typing and will avoid this wherever possible. During high school Logan didn't have reader/writers to help him with exams but did have extra time allowed to complete the exam.

Having a diagnosis of being dyslexic definitely helped as it made him realise why he struggled at certain things.

When asked how he feels dyslexia is perceived in New Zealand Logan says "It is better now than what it used to be 10 to 15 years ago and he feels that there are more resources available to help those with dyslexia".

Logan says that spell check has helped him with spelling however he acknowledges that it doesn't always work as the words look right but they are often wrong. Where he can he will avoid too much writing. He would describe himself as a highly functioning dyslexic and has worked to improve his reading skills.

Following on from his FMG Young Farmer of the Year win Logan has clashed with some of the contests major sponsors with regards to professional development opportunities such as Kellogg Rural Leaders, which he acknowledges are great opportunities but do not suit him as a dyslexic and he would prefer to use the money on other things which would be more beneficial to him, such as a research project he has initiated on phosphate leaching involving plot trials on his farm. Going forward he would like to see changes made to the contest to reduce the amount of theory as he feels that the large amount of theoretical knowledge required hinders dyslexics and those who are affected by other learning difficulties and feels that the theory required is likely to put many people off entering.

I questioned Logan about his perceptions of dyslexia as a stigma and do we need to have an ambassador for dyslexia in the same way that Doug Avery is an ambassador for mental health in the rural community. Logan thought this was a good idea as this would get people talking about the condition and would encourage others to talk about it. He says that on the farm many of the day to day activities are practical and farming is about find solutions which you can't get from theory.

With regards to compliance in farming businesses which can be difficult for dyslexics, Logan says they are lucky in Otago as farming is currently a permitted activity and no consents or Farm Environment Plans are required. However their farm does have a Farm Environment Plan. Logan feels that Farm Environment Plans should be simple and able to be completed by farmers as they know and understand their farms and that the consultants don't understand what happens on their farm. He says that consultants don't understand the small things to make changes which can then achieve impact.

Logan is full of praise for Beef + Lamb New Zealand's single page fact sheets and posters. He really likes the winter grazing fact sheets and says they are full of pictures and have minimal words. If you want any further information you can look on the website or you can just use the pictures to make changes.

When asked about what help he would like from the agricultural industry, he said they have been fairly good but they should strive for excellence and push maths and science as they are fun and can cover writing as a weakness.

Logan hasn't been afraid to seek assistance as and when required. When completing his research project as part of the FMG Young Farmer of the Year competition he sought assistance from his family and fiancée to proof read the project and correct spelling and grammar. His mother has been an essential ingredient in his success up until a couple of years ago as she has understood his dyslexia and has been there to help him over the years. His philosophy is "Near enough is good enough".

Logan has been a passionate member of New Zealand Young Farmers for many years, and he feels that the organisation should acknowledge that there are dyslexia and literacy issues within its members and says that there should be concessions to help those who require help to improve their literacy skills. The organisation could partner with Primary ITO or the Rural Youth and Adult Literacy Trust to provide assistance for its members. He also feels that the Young Farmer of the Year Contest needs to ensure that it has a strong practical base component as Young Farmer members who struggle with learning difficulties look at the contest and think that if they were successful in getting to the Grand Final that the theory would be over their heads. If many could get by on the practical skills then more members would give the contest a go. When I suggested the idea of reader/writers to assist those with learning difficulties to complete the exam he thought that some would take up this option if it was made available to them. It may require a slight change to the exam set up but would be more inclusive for those who would otherwise struggle. No time concessions would need to be made as they already have a reader/writer to assist.

9.2 Mark Warren – Sheep and Beef Farmer and Author Hawkes Bay

Mark Warren is a farmer and the owner of Waipari Station in Hawkes Bay. He is dyslexic and has also written a book titled “Many a muddy morning: Stories From A Life Offroad and on the Land”.

Mark was aged 40 when he discovered that he was dyslexic, he was considered bright at school and achieved A grades but his ABC’s and 123’s were a disaster as they were always backwards. Whilst he struggled through school, he developed techniques to manage his way through and used these techniques to make his own mark on the world. His diagnosis of dyslexia came as a revelation after his ex-wife, a teacher suspected he might have dyslexia and ran some tests confirming her thoughts. To this day he continues to struggle with spelling. Throughout his journey he has had several great mentors but none of them have been dyslexic and he says that having people who can write neatly and do the paperwork such as a partner have been a huge help and having a good accountant has been extremely beneficial.

He describes dyslexic children as “square pegs in a round hole” as they tend to be laughed at during school and will struggle through as the help isn’t always there for them. Mark feels that the New Zealand education system fails dyslexics and often many have their confidence knocked.

He is quick to point out that dyslexics have many advantages over non-dyslexics. He says “dyslexics are great at managing risk, and they are prepared to take risks”. Often they are successful in what they do because they can imagine risk and then manage it. He goes on to state “That in business they have a lateral mind and can see outcomes down the track and have worked out ways to deal with the outcomes or counteract any issues that may arise.” He also mentioned that “Dyslexics can imagine a scenario in their head and can look down the line and come up with an answer”. Mark says that dyslexic people can’t follow instructions but they do achieve the outcome required and get to the outcome with no issues. His piece of advice for working with dyslexic staff is to “Tell them what you are trying to achieve and they will do it, if you tell them step by step how to do it, then they’ll get lost”.

Mark says that biggest asset for dyslexics is a high powered iPhone as this allows them to take photos of the screen at presentations and conferences. The iPhone also enables them to download and use apps such as google talk and Grammarly to help them get across what they are trying to say.

He is also certain that dyslexia is genetic and often runs in families, sighting his own family as an example. His mother was dyslexic, he is dyslexic and his son is also dyslexic. Mark has a theory that when people were sent out from England to New Zealand in the 1800s, that many who came to New Zealand were actually dyslexic. This worked to their advantage once they arrived in the colonies as they were able to manage risks such as snowfalls and fires. Dyslexics also tend to be more confident and outgoing when they are confident about their dyslexia and therefore those who arrived in New Zealand made friends quickly and many ended up marrying and therefore we have ended up selectively breeding for dyslexia in New Zealand.

Mark is quick to point out that there is still a huge amount of judgement and stigma in New Zealand about dyslexia and that dyslexia should be re-branded to ‘laterally gifted’. He says “We need to remove the stigma and highlight clever dyslexics both in the agricultural sector and outside of the sector”. There is no shortage of talented dyslexics: Bill Hamilton, John Britten, Lewis Hamilton, and Steve Jobs. He mentions Bill Hamilton and John Britten in particular as these were two New Zealander’s who invented clever things but were often laughed at. Mark has offered to mentor dyslexic kids who are struggling as he acknowledges that they need confidence and that the school system often knocks them back. He has even suggested to his former high school that they develop a centre for students with dyslexia and has said to them that if the school sets this up he will donate

money to help fund a dyslexic teacher, with the view that in time this centre will be self-funding. Dyslexic teachers are in the minority. He also feels that the percentage of dyslexics is higher in the dairy sector than in the red meat sector. This is based on the fact that many leave school at fifteen and they can then work their way up through the industry. Dairying also requires quick mental arithmetic, which if you break down into chunks can be easily managed by dyslexics. Mark states that dyslexics make good mechanics, engineers and farmers as they make things well.

Mark has a simple test for dyslexics:

- (A) Are you laughed at by others?
- (B) Others can't understand you when you're trying to explain things
- (C) You find it hard to understand why other people can't see the big picture

Overall Mark sees his dyslexia as a positive thing as it has enabled him to see opportunities where others can't, things which he thinks are obvious but others don't. It also gives him advantages that others don't have. He says we need to remove the stigma and let those with dyslexia know that having dyslexia is a good gift.

Conclusion

To sum up do current extension methods cater for farmers with dyslexia? In short my answer is no and we have a long way to go. The industry recognises it is a problem and dyslexia is still a major stigma within the agricultural industry. But we haven't worked out how to deal with it, nor have we acknowledged that it isn't an issue but rather an advantage and something we should be embracing. A change in mind set is needed at both the industry level and at an on farm level.

If we acknowledge that dyslexia is prevalent within our sector we can then look to change current extension methods, or re-design current methods to be more inclusive of dyslexic farmers. Extension methods have remained largely unchanged over the last thirty years. The main methods of extension are workshops, discussion groups and printed resources which are often very wordy and of no help to a dyslexic farmer.

Discussion groups can be suitable for a dyslexic as they are largely as the name suggests about discussing the host farmers farming business and improvements which could be made on a particular aspect of that business. However they often require some reading of a fact sheet about that business or reading of a PowerPoint presentation.

Beef + Lamb New Zealand in the past three years produced more and more videos and podcasts on popular extension topics which have been very well received. These cater for all levels of literacy and have the advantage that they can be watched or listened to at any time of the day or night and without even having to leave the farm. It could be assumed that dyslexic farmers have found these incredibly helpful.

I acknowledge that producing videos and podcasts can be expensive for the industry or a regional council to produce but they are much more inclusive than a printed resource book or factsheet and do cater for more learning styles as they can also demonstrate a practical element.

Everyone I spoke to as part of this research acknowledged that there is a lot more that we can do to help and assist dyslexic farmers. There are many tools available which can assist with reading, writing and spelling but also screening tools to establish if a farmer does actually have dyslexia.

The strongest themes to come out of this research are that dyslexia is still a major stigma within the industry and this needs to be acknowledged and changed. As an industry we need to change the mindset from dyslexia being a negative thing but instead we need to embrace it as a different way of thinking.

There are some fantastic dyslexic farmers out there who are doing great things in their own farming businesses but also outside of their farming businesses such as writing a book and winning the FMG Young Farmer of the Year Contest, but are also high performing and well respected farmers in their own right. These are the kind of people who we need to break down the barriers and prove that dyslexia is in fact something to be proud of rather than ashamed of. Until we change the mindset we will struggle to make the other changes required.

Recommendations for the Agricultural Sector to assist farmers with dyslexia:

Mental Health in the rural community, sometimes called 'The Black Dog' has been a stigma for many years. Often farmers under pressure are too embarrassed to seek help instead preferring to bottle up their negative thoughts and emotions. Often this has negative consequences. Slowly the industry is breaking down the barriers and stigma to mental health and encouraging farmers to seek help for their own and their loved ones sake. Suicide is far too prevalent in rural communities. There is probably a link between suicide and dyslexia but this is outside the scope of this report.

After conducting interviews with dyslexic farmers and from my observations I feel that dyslexia is the next stigma that needs to be broken in the rural sector. Dyslexic's are talented and gifted people and we need to acknowledge and support them to help them become better farmers, but to utilise their other strengths that dyslexia has given them. But we also need to cater for them when designing extension activities.

Recommendations for the Agricultural Sector:

- **Reduce the Stigma of Dyslexia**

Firstly we need to work on removing the stigma of dyslexia in the agricultural sector. This could be done through highlighting and show casing some clever and exceptional dyslexic farmers within the sector. What is their X Factor and how have they used their dyslexia to get to where they are today? Can we develop a Monitor Farm programme where the host farmer is dyslexic? In the same way that we now have Doug Avery as the advocate and ambassador for mental health, we need someone who can be the advocate and ambassador for dyslexia. Is it possible to tap into Farmstrong as a way of promoting dyslexia or do we need to create another programme of a similar nature for profiling dyslexia?

- **Carry out Surveys**

Conduct surveys to determine the true extent of dyslexia in the agricultural sector, at both the rural professional level and at the on farm level. This would give the industry a true picture of the numbers of dyslexics in the sector.

- **Develop a Mentor System**

Create a mentor system for high profile dyslexic farmers to mentor younger dyslexic farmers to help show them that dyslexia is a gift not a disability.

- **Develop Workshops for Rural Professionals**

Designing workshops for rural professionals to help them understand dyslexia and how they can best work with dyslexic farmers. These could be run through the New Zealand Institute of Primary Industry Management (NZIPIM).

- **Develop Extension Resources in Dyslexie Font**

Develop resources and workbooks in Dyslexie Font. This is readily available as a type face and makes it easier for dyslexics to read. Every resource or workbook doesn't need to be written in dyslexic font, only the most popular or most topical such as a Farm Environment Plan Template or Body Condition Scoring. DairyNZ and Beef + Lamb New Zealand would be able to work out what their most requested resources were. This would provide a guide as to what should be developed in dyslexic font.

- **Raising Awareness of Support Available**

Making farmers aware, especially young farmers that there is help and resources available for them to help them improve their reading and writing skills. Primary Ito has a screening tool which tests trainees to determine if they have dyslexia and then based on the results will provide them with the support they need to succeed in their chosen courses.

- **Develop Digital Resources**

Develop more videos and podcasts on popular extension topics as this allows dyslexic farmers the opportunity to learn about a particular topic such as environmental policy updates, equity partnerships, and conference presentations without having to read resource books or fact sheets.

- Regional Councils need to develop more video presentations on changing environmental regulations. Currently many factsheets are produced about the impending rules and regulations and how they will impact farmers, but often these are very wordy with little to no pictures or diagrams. Farmers are very keen to learn about the rules and what they need to do but having to read pages of information is a huge barrier. There are opportunities to collaborate with the industry bodies to produce these videos.

- **Offering Support for Completing Paperwork**

Filling in forms is a major barrier to anyone with dyslexia. Regional Councils should consider having drop in days in farming district's to assist farmers with filling in forms required for environmental compliance. They could also consider having staff available at Council offices to assist farmers filling in forms for day to day resource consents. The farmer can then dictate the information to a staff member who completes the form.

- The Young Farmer of the Year Contest is becoming too theoretical and thus puts many young farmers off entering and in particular those with dyslexia and other learning difficulties due to the amount of theory which is required to be learnt. Farming is a practical skill and thus the contest should be predominately practical. Where tests or exams are required then additional support in the form of reader/writers should be made available to those who may struggle.

- **Developing Questionnaires**

When developing questionnaires for dyslexic farmers, use multi choice questions as these suit dyslexics better as their minds go quicker. As opposed to questions which require written long answers.

- **Changing Mindsets in the Agricultural Community**

Going forward we need to change the mindset from dyslexia being a stigma to it being an opportunity for those who are affected by it. It is a positive condition.

- **Offering Support to Those Who have Dyslexia**

The industry needs to provide some form of screening or access to screening so that those who think they might have dyslexia are able to confirm that they do have dyslexia, as this will provide them with an explanation for their struggles.

- **Develop Resources on Dyslexia?**

Provide information about dyslexia. While some would argue that this isn't the industry's role the industry has acknowledged that mental health is an issue and has provided information on improving mental health and how to seek help. The same should be done for dyslexia. The information needs to include the challenges and the good aspects of dyslexia. In some ways this links back to having an ambassador for dyslexia.

Advice for managers who have dyslexic employees:

- Tell your employee what you are trying to achieve and they will do it, if you try and explain the steps to them then they will get lost.
- Recognise that having dyslexic people in a team is useful as they are good problem solvers and are very solution focussed.
- They can often see opportunities where others can't.

Advice for Rural Professionals

- Recognise and be aware that many farmers are dyslexic and may not tell you that they are dyslexic. Often there are tell-tale signs. Know what to look for. Challenge yourself to think "How can I help them?"
- Rather than getting the farmer to fill in forms, ask questions about the farm business and record the answers yourself, often many dyslexics are good verbalists because they struggle with writing.
- Consider reading important documents aloud to the farmer, this allows them to sit and listen and absorb the information. If you hand them a document and ask them to read it, it won't happen.
- When designing extension events, when putting together the PowerPoint use lots of diagrams and pictures and make it as visual as possible. Have a large practical element to the day. Often dyslexics will use their phone to take photos of the slides.

Further Research

It wasn't until I started this project that I realised how broad this topic actually was, and I could have easily completed a much longer report or a Master's Thesis on this topic. Instead this report is a snapshot in time of dyslexia in the rural community and how current extension methods don't cater for those farmers who are affected by dyslexia. Had I had longer to focus on the project there were many more farmers I could have interviewed and surveys I could have undertaken to try and determine the extent of dyslexia in the farming community.

There are many tools and resources out there to help those in the rural community with dyslexia. I feel that there is a lack of information about what these tools and resources actually are and I didn't have the ability to explore these in great detail. Further research could be undertaken on what digital and online tools are available to help dyslexics and how these could be adapted for the agricultural sector.

Further research could be undertaken to determine the true extent of dyslexia in New Zealand's rural community and to find out the numbers of farmers affected by this condition and their ages to determine if younger or older farmers are affected. It is now time for the industry to acknowledge that this is an issue and it would be worthwhile for the two industry bodies to commission a report to determine the extent of dyslexia in New Zealand's farming community. As part of this research literacy and numeracy should also be included.

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Rural Youth and Adult Literacy Trust

<https://www.adultliteracy.ac.nz/>

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<http://vark-learn.com/>

First accessed 5th November 2019

Yale Centre for Dyslexia and Creativity

<https://www.dyslexia.yale.edu/>

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Videos:

Tedx Talks

Christian Broer: How a dyslexic font can help people with dyslexia to read

<https://www.youtube.com/watch?v=qVaeGOflF7w>

Tedx Talks

Jonathan Buchanan: Stop Climbing, Start Swimming: The hidden advantages of dyslexia

<https://www.youtube.com/watch?v=VIlbeqMGB3o>

Other

Personal email correspondence with Aaron Meikle, Beef + Lamb New Zealand's Product Development Manager.

Personal phone and email correspondence with Mike Styles, National Specialist Literacy and Numeracy, Primary ITO

Appendix 1

Farmer Interview Questions

Interview Questions for Farmers with Dyslexia

1. How old were you when you discovered you had dyslexia?
2. Describe the factors that made you think you had dyslexia.
3. Did this diagnosis help or hinder you?
4. Why?
5. How do you feel dyslexia is perceived in New Zealand? Perceived by whom / what organisations?
6. What coping mechanisms or skills have you developed to help overcome your dyslexia?
7. Would you describe yourself as a high functioning dyslexic (you have managed your way through) or as a literate dyslexic (you're a good reader but bad at spelling)?
8. Why?
9. What impact has dyslexia had on your entrepreneurial propensity (or a less technical term here) / farm business/family life?
10. Do you feel that we should raise the awareness of the extent of ?? (I have added these two words for you to consider as I think they clarify the intent of this question... dyslexia in the agricultural industry?
11. (a) Do you feel that this would reduce the stigma and promote the abilities of dyslexic individuals?

(b) How do you feel that we could do this?
12. Red tape surrounds modern farming businesses which can make it difficult for dyslexic farmers to operate. What do you think the agricultural industry and regional councils could do to support farmers with dyslexia?
13. What changes would you like DairyNZ and Beef + Lamb New Zealand to make to their extension programmes to better cater for farmers with dyslexia?
14. What help would you like from the agricultural industry to assist with your dyslexia?
15. Have you sought advice and assistance when needed? If yes, who / where from?

16. The role of a significant other is an essential ingredient for success, whether it be the support of colleagues, friends or family.

17. (a) Is there a person who has been there for you to help and support you?

(b) Please describe how this person has helped you?