





# **APPRECIATING AND SUPPORTING NEURODIVERSITY**

Version 1.1









# APPRECIATING AND SUPPORTING NEURODIVERSITY

**PREPARED FOR:** Construction and Infrastructure Centre of Vocational

Excellence

Food and Fibre Centre of Vocational Excellence

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**DATE:** 18 November, 2024



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# **Abbreviations**

Table 1: Table of abbreviations used in this report.

ABBREVIATION	DEFINITION
C&I	Construction and Infrastructure Sector
CPD	Continuing Professional Development
ConCOVE	Construction and Infrastructure Centre of Vocational Excellence
F&F	Food and Fibre Sector
Food and Fibre CoVE	Food and Fibre Centre of Vocational Excellence
РТЕ	Private Training Establishment
VET	Vocational Education and Training

# **Definitions**

Table 2: Table of definitions used in this report.

TERM	DEFINITION
Neurodiversity/ Kanorau ā- roro	Someone who is neurodivergent behaves, thinks and learns differently compared to those who are neurotypical. This term can be used to describe an individual whose brain functions differently to what we consider "normal". This includes people with autism, ADHD, Tourette's, dyslexia and a range of other neurodiverse conditions¹.
Adapted Assessment	Where the task remains the same but the conditions of the assessment could be different for instance a different location, length of time to complete it, means of undertaking it (e.g., via computer), timing (morning or afternoon), and/or accessibility of the exam material (different coloured paper, presentation of material). <sup>2</sup>
Alternative Assessment	A different assessment prepared specifically for disabled students which aren't available for non-disabled learners. This new assessment

<sup>&</sup>lt;sup>1</sup> Exceptional Individuals, 'Neurodiversity'

<sup>&</sup>lt;sup>2</sup> Paddy Turner, 'Definitions of adapted, alternative and inclusive assessments', Sheffield Hallam University Blog, October 2013



	must still meet the learning outcomes and equivalent marking criteria, for instance an oral presentation. <sup>3</sup>
Disability	In New Zealand, disability is defined under the Human Rights Act 1993, Section 21 (1) (h) as: disability, which means— (i) physical disability or impairment: (ii) physical illness: (iii) psychiatric illness: (iv) intellectual or psychological disability or impairment: (v) any other loss or abnormality of psychological, physiological, or anatomical structure or function: (vi) reliance on a disability assist dog, wheelchair, or other remedial means: (vii) the presence in the body of organisms capable of causing illness <sup>4</sup>
Inclusive Assessment	The same assessment is taken in the same way by all students, for instance a portfolio assessment. <sup>5</sup>

# Acknowledgements

This report was made possible thanks to the support and guidance of numerous individuals and organisations. Foremost among these are the New Zealand Construction and Infrastructure Centre of Vocational Excellence and the New Zealand Food and Fibre Centre of Vocational Excellence. We extend our gratitude to these teams for commissioning this research, enabling an exploration of this critical topic. Special recognition goes to the Portfolio managers, Eve Price (ConCOVE) and Lilla Du Toit (Food and Fibre CoVE), whose efforts in navigating sectoral transformations and managing stakeholder dynamics greatly facilitated the project's success.

We are deeply grateful to the project's Steering Committee for their invaluable insights and direction. Their expertise was instrumental in shaping the study, ensuring its alignment with the focus sectors and its relevance to the New Zealand Vocational Education System.

Our thanks also go to the industry leaders and education professionals who generously shared their time, knowledge, and perspectives. This report aims to represent your views and needs accurately and respectfully, and we hope we have succeeded in doing so.

<sup>4</sup> New Zealand Human Rights Act 1993

ibid <sup>3</sup>

<sup>&</sup>lt;sup>5</sup> Paddy Turner, 'Definitions of adapted, alternative and inclusive assessments', Sheffield Hallam University Blog, October 2013



# **Copyright Information**

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## INTRODUCTION

Neurodiversity (ND) describes the concept that people experience and interact with the world around them in many different ways; there is no one "right" way of thinking, learning, or behaving, and differences are not viewed as deficits. This concept can reduce stigma around neurodiversity and learning differences.

It is estimated that between 15-20% of the world's population is neurodiverse. Many neurodiverse individuals/kanorau ā-roro exit the education system with low self-esteem, low aspirations, and have trouble finding and keeping work. Research shows high rates of anxiety amongst neurodiverse learners which gives way to health and well-being issues and the significantly high rates of dyslexia found amongst the prison inmate population (estimated to be up to 90% compared to ten percent of the wider NZ population) demonstrate how we have failed both the neurodiverse community but also Māori and Pacific communities (in prisons). All of this combined is a waste of talent and is estimated to cost New Zealand NZD\$800 million a year in unidentified and unsupported dyslexia alone.

ND affects all people, but for communities that are already marginalised, the intersectionality leads to further isolation. Only three percent of SPELD diagnosis are with Māori. Families don't have the resources to access suitable support, schools are underfunded and under-trained. The disadvantaged are even more disadvantaged. There is a lot of shame around being neurodiverse in the workplace and in life. Evidence suggests this could be stronger in some cultures.

Cultural awareness of all these conditions, a lack of culturally targeted services and culturally diverse expectations of children's behaviour and developmental milestones can also affect engagement and early intervention. Research shows there are barriers for Māori, Pasifika and Asian families to access disability and support services for brain and behaviour issues. NZ research highlights the cultural biases in neuropsychological testing and programmes, which mean that all New Zealanders, but Māori in particular, score less well on some tests that are based on American-normed education and assessment systems, and need adjustment.

The representations of, and understandings of neurodiversity also very much favour stereotypically male manifestations, particularly in autism and ADHD. Due to this, there are a number of women who do not get diagnosed at a similar time to men and can result in mental health issues due in part to society reinforcing that their behaviour is their own personal failing. Providing further understanding of different representations of neurodiversity from a young age is therefore critical.

To ensure that there is success in this field there is also a need to shift from compliance-based inclusion (disability plans etc) to deliberate inclusion, from 'they' to 'us' and 'we'.

The title of this report is appreciating and supporting neurodiversity. The report will be exploring methods to support both neurodiverse people and those supporting those with neurodiversity. With appreciating, this report is focused on the appreciation of the diversity of neurodiversity, and whilst this report cannot explore and provide focused elements for every condition under the neurodiversity umbrella, it is focused on support that can be used for most, if not all areas under the umbrella.

<sup>&</sup>lt;sup>6</sup> Joel Montvelisky, 'Neurodiversity As A Strengthening Point For Your Team And Our Society', Forbes, August 13 2021,



This research is in two halves. The first part is a literature review comprising firstly international case studies reviewing the different policies relating to neurodiversity and education in each, as well as, where possible examples of particular initiatives in industry relating to neurodiversity, education, and support. Completing the literature review is a focus on New Zealand and the current policies and actions taking place, as well as a closer look at the different cultural elements relating to neurodiversity. The focus across all of this is in vocational education, however, unavoidably, there are references and mentions to earlier education due to the significant connection and contribution which earlier education has in these circumstances. What is important to note with this report is that to-date there has been very little research into neurodiversity in vocational education and especially assessment. The majority of the research that has been found and explored here focuses on the wider grouping of disabled people. The decision was made to include neurodiversity within the scope of 'disabled' because many of the disability, human rights, and employment laws include at least some of the different conditions which make up the neurodiverse umbrella, which employers need to make reasonable adjustments for. Each country in the literature review naturally has a different understanding of the terms disabled and neurodiverse, however we have endeavoured to ensure that the content included here can reference people with neurodiversity.

The second half of this report is summarising the engagement that has been achieved as part of this research along with a number of proposals:

- For training in education and work with regards to neurodiversity and how best to support them especially with regards to assessment design, learning design, and presentation of other materials.
- For training in education and work with all learners/staff to understand what neurodiversity is and what approaches can benefit them.
- For training in education and work using cultural and gender lenses.
- For supporting those with neurodiversity in strategies to empower themselves to learn and work.

## LITERATURE REVIEW

## INTERNATIONAL

## **Australia**

#### **Key takeaways:**

- Teacher training in learner diversity is beginning to happen in some states but inconsistently to-date.
- Adaptable assessments are occurring in vocational education.
- There is government support via Job Access to find and retain work.

A 2020 Review of the Disability Standards for Education 2005 highlighted that one of the biggest difficulties around inclusive education systems is for the teachers and the importance of



'teacher training and ongoing professional learning, to upskill educators to respond to, and accommodate, diverse learners'<sup>7</sup>. Referencing the idea of mainstreaming (i.e. no special schools) becoming mandatory, the review continues that 'educators consequently do require specialist training relating to specific understandings of particular diagnostic categories, in order to develop essential skills for construction of individual pedagogies, or learning adjustments, for students with additional needs'<sup>8</sup>. This need for teacher and school training in these areas is also reinforced in the Draft National Autism Strategy 2024<sup>9</sup>. This strategy also referenced an additional theme from the consultation process, that of improving 'and creating pathways and transitions from schooling to further education and work'<sup>10</sup>.

In the Inclusive Education in Australia Policy Review they reviewed how well the different states had done in initial teacher training for learner diversity and found that it was quite inconsistent between them. New South Wales had taken action to ensure that initial training included responsive pedagogies to diverse people, whilst Queensland, Victoria and Western Australia also had included professional development opportunities to teachers and support staff on inclusive and equitable practices<sup>11</sup>.

A further area of note in Australia is support for neurodiverse workers to find and keep jobs, as well as upskill. The Australian Government created a national hub called 'JobAccess' to support disabled people, employers and service providers. With disabled people the support comes in helping them find jobs and get promoted as well as financial and other support, and expanding workplace skills. For employers, they are supported in understanding the benefits of employing people with a disability, and in the recruitment of disabled people, and in finding financial support to help with this. With service providers, they support them in developing services to best meet the needs of disabled people<sup>12</sup>.

The TAFE's are a major element of Australia's vocational training. TAFE NSW for instance, as part of their Disability Support Services, do reference those with neurodiverse conditions as some of those who could be entitled to assistance and do reference the opportunity for modifying assessment and exam conditions<sup>13</sup>. In TAFE SA's Assessment Policy they reference two principles of assessment which are useful here, firstly, fairness. They write that the 'individual learner's needs are considered in the assessment process', and 'where appropriate, reasonable adjustments are applied by the RTO to take into account the individual learner's needs'. Under flexibility, the policy states that the 'assessment is flexible to the individual learner by…reflecting the learner's needs…using those [assessment methods] that are appropriate to the context, the unit of competency and associated assessment requirements, and the individual'<sup>14</sup>.

In Australia, the Australian Apprenticeships Incentives Programme provides a range of assistance to support apprentices with disabilities, including the Disabled Australian Apprentice

<sup>&</sup>lt;sup>7</sup> Christina Holly, '2020 Review of the Disability Standards for Education 2005', Edith Cowan University, 2020.

<sup>8</sup> ihid

<sup>&</sup>lt;sup>9</sup> Australian Government, Draft National Autism Strategy.

<sup>&</sup>lt;sup>10</sup> ibid

<sup>&</sup>lt;sup>11</sup> Suzanne Carrington et al, 'Inclusive education in Australia policy review', Autism CRC, 2024.

<sup>&</sup>lt;sup>12</sup> JobsAccess, 'About Job Access'.

<sup>&</sup>lt;sup>13</sup> TAFE NSW, Disability Support Services

<sup>&</sup>lt;sup>14</sup> Margie Fixter, 'Assessment Policy', TAFE SA, 2020.



Wage Support (DAAWS) which is a weekly payment of AU\$104.30 for 12 months (if long term disabled) paid to employers as a way to incentivise employers to hire disabled people. <sup>15</sup>

## **France**

#### **Key takeaways:**

- National obligation for companies with 20 or more employees to hire disabled workers
- Agriculture industry established national action plan to upskill staff to better support inclusion in industry.
- Strong teacher training programmes in place around inclusion.

In companies which have at least 20 employees for five years in France, there is an obligation to employ disabled workers/war veterans to a proportion of 6% of the total workforce. In addition to this, every company, including those smaller than 20 employees must declare how many of their employees are disabled workers. If a company who meets the requirements but doesn't have at least 6% of their employment rate comprising disabled people, they are given an annual fine, known as a contribution. The cost of the contribution is the cost that the number of disabled people who should have been hired would cost. That money ends up with Agefiph, an Association which has a fund for the professional integration of disabled people<sup>16</sup>.

Whilst France has special schools for disabled people and programmes, it was reported in April 2023 that The European Committee of Social Rights (ECSR) announced that France was violating the rights of people with disabilities. One area in which they said France was violating was in children's right to access education and that many children were either completely excluded from access or given inadequate access<sup>17</sup>.

In a review and analysis of the French system by the European Agency for Special Needs and Inclusive Education it mentions how various 'memos specifying educational inclusion procedures are regularly disseminated to all teachers, in particular at the opening of every school year. Initial training of all new teachers includes this theme. National academic and ongoing training programmes also make this a priority. Many online resources are made available to teachers' <sup>18</sup>.

In a 2024 review of agricultural education in France from the Ministry of Agriculture and Food Sovereignty 'agricultural education establishments participate in the educational inclusion of young people with special educational needs. In 2022-2023, 4,669 students with disabilities benefited from human assistance in technical agricultural education provided by more than 1,600 school assistants (AVS) stationed in establishments. A national action plan has been established to facilitate the educational inclusion of these students by professionalizing staff

<sup>&</sup>lt;sup>15</sup> Australian Government: Australian Apprenticeships, 'Financial support for employers', accessed 21<sup>st</sup> June 2024.

<sup>&</sup>lt;sup>16</sup> Directorate of Legal and Administrative Information (Prime Minister), Private sector: what is the obligation to employ disabled workers (OETH)?', February 2024

 $<sup>^{17}</sup>$  Autism Europe, 'The Council of Europe declares France in violation of the rights of disabled people', April 2023

<sup>&</sup>lt;sup>18</sup> European Agency for Special Needs and Inclusive Education, 'Country Policy Review and Analysis: France', 2016.



with a dedicated training program, facilitating support for establishments and authorities and improving the quality of learning'19.

## **Germany**

#### **Key takeaways:**

- Significant state support to help neurodiverse workers learn both 'life' skills and vocational skills.
- Gap in CPD and other regular training for mainstream schools to be more inclusive of those with disabilities.

In an interview hosted by Education New Zealand with Tanja Ergin, Managing Director of Bundesarbeitsgeminschaft der Berufsbildungswerke (BAG BBW) (Association of Vocational Centres in Germany) she outlined what the German system entails with regards to supporting disabled people post-school and into the vocational system. The current system has been in action for over 50 years, it is a half-way house style programme for neurodiverse and other people with disabilities after their initial education to prepare for work and life. The majority of the learners live on-site, in a type of boarding school where they get support, not just having a case manager but connecting and integrating with others. There is an initial 12 month vocational preparation measure, to get them into the vocational training, it could be longer, potentially 24 months, depending on the learner. During this time they are given tasters of different industries to try, to see what works for them and what is the most suitable - gardening, hospitality industries are particularly popular.<sup>20</sup>

The government contribute a lot of money towards supporting companies who hire staff with disabilities but there are still some who are prejudiced against hiring disabled workers. The latest figures from BBW state that over 40,000 companies in Germany do not have one employee with a disability. Word of mouth is strong however, and once companies start hiring disabled people, they usually keep doing it. BBW usually work with smaller companies, which are easier and seemingly more open to hiring disabled learners than larger companies. In smaller companies there is more of a personal approach, in larger they are treated more like a number.<sup>21</sup>

With the learners in this programme they usually live in the facility and are classed as learners rather than employees. By having them undertake this training and experience it can make them then eligible to undertake an apprenticeship. The learners are paid  $\in 100$  a month, as they having free living and food etc and that cost isn't paid by the employer, who only have to contribute if and when the worker is in regular employment.<sup>22</sup>

The Committee on the Rights of Persons with Disabilities, who monitor the implementation of the United Nations Convention on the Rights of Persons with Disabilities, of which Germany is a

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<sup>&</sup>lt;sup>19</sup> Ministère de l'agriculture et de la souveraineté alimentaire, 'Portrait de l'enseignement agricole', 2024.

<sup>&</sup>lt;sup>20</sup> Tanja Ergin interview, Education NZ & ConCove, Stuart Martin and Eve Price, 15.05.2024

<sup>&</sup>lt;sup>21</sup> ibid

<sup>&</sup>lt;sup>22</sup> ibid



signatory released their concluding observations on the second and third periodic reports of Germany in September 2023. As part of their remarks they had two main concerns regarding education: A lot of disabled people are still in special schools, segregated from mainstream schools which can have a negative effect on their future. The other point is that mainstream schools are ill-prepared for inclusion, in part due to lack of training for teachers and other educational stuff to be able to<sup>23</sup>.

## Greece

#### **Key takeaways:**

- The current Greek system allows for adaptation in schools to ensure that learners who require it can be assessed via oral assessment instead of written.
- For companies with over 50 staff they must hire a quota of disabled persons.

In a 2008 Government Gazette in Greece- Ministry Law no. 3699, they published 'Special Education and Training (ESE)', a set of educational services to support learners with disabilities and also recognised special education needs and to students with special educational needs<sup>24</sup>. It is designed to ensure that to "ensure the provision of free public special education and training to disabled people of all ages and for all stages and educational levels. It is also committed to ensuring to all citizens with disabilities and identified special educational needs, equal opportunities for full participation share and contribution to society... We issue the following law passed by Parliament: livelihood, economic self-sufficiency and autonomy, with full recognition of their rights to education and social and professional integration"<sup>25</sup>.

In Article 4 of the legislation, section F it states: "The proposal for the replacement of the letters of tests of students with disabilities and special educational needs with oral or other forms of tests, in the promotional and graduation exams of primary and secondary schools of an education, as well as in admissions to higher education...Especially for students with special learning difficulties, such as dyslexia, dyscalculia...recommends the teaching and evaluation method for the control and certification of the student's knowledge in the courses under consideration, according to the detailed curriculum. It also recommends alternative ways of examining the deaf, hard of hearing, blind, visually impaired and hearing impaired students at all levels of education, as well as the alternative ways of their school assessment outside of exams."<sup>26</sup> This is very useful as it clearly states that there is not a requirement for those with neurodiversity to have to undertake written tests, but can do so differently, to be the best utilisation for the learner. For those workers who do not undertake written tests there are questions to be asked about how they fare when faced with having to write as part of their job in later life. At present, this information is not available.

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<sup>&</sup>lt;sup>23</sup> Vanessa Bliecke, 'Failing the Test', Verfassungsblog, September 2023.

 <sup>&</sup>lt;sup>24</sup> ΕΦΗΜΕΡΙΣ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ ΤΗΣ ΕΛΛΗΝΙΚΗΣ ΔΗΜΟΚΡΑΤΙΑΣ, ΤΕΥΧΟΣ ΠΡΩΤΟ, Αρ. Φύλλου 199, 2
 Οκτωβρίου 2008. Government Gazette of the Hellenic Republic, Issue One, No. Sheet 199, October 2, 2008.
 <sup>25</sup> Ibid.

<sup>&</sup>lt;sup>26</sup> Ibid.



In a European Commission study on Greece, it revealed a quota system also happens in Greece: 'public and private entities employing over 50 staff are obliged to comply with employment quota of persons with disabilities'<sup>27</sup>.

A review of the disparities in Greece between disabled and non-disabled in tertiary education showed that even though there is a 5% quota of placements at University for disabled people, only 1,340 disabled students went to University in 2016-17, when there were 3,572 places available for them<sup>28</sup>. This leads through to many employers choosing not to hire disabled people for meaningful work, in part due to costs of making workplaces accessible resulting in startling statistics including that 1 out of 2 disabled people between the ages of 16-64 are at the risk of poverty across Greece<sup>29</sup>.

## **Singapore**

#### **Key takeaways:**

- Singapore Government has strong programmes in place to help train neurodiverse workers.
- There are employer wage schemes to incentivise employers to hire disabled workers.

Singapore has government-funded special education schools for children with moderate to severe special educational needs. Whilst they have their own school, there are opportunities to interact with mainstream schools during joint breaks, co-curricular activities, and trips. One of the important elements that they work on is helping with transitioning learners from school to post-school life<sup>30</sup>.

Singapore has a programme called SG Enable which offers support to disabled job seekers including the 'Under the Open Door Programme (ODP)'. In this programme disabled people receive up to 'one year of job matching, and customised employment support from trained job coaches. Grants under the ODP provide subsidies for persons with disabilities to attend training courses by Enabling Academy – SG Enable's disability learning hub – as well as for workshops that prepare employers and their employees without disabilities to interact with, hire, integrate and retain employees with disabilities in their organisation. Between 2020 and 2022, SG Enable and its partners placed an average of 500 persons with disabilities into jobs each year'31.

Singapore have launched a lifelong learning programme called SkillsFuture. It is for all Singaporeans and is described as:

<sup>&</sup>lt;sup>27</sup> Eleni Strati, 'Striving for an inclusive labour market in Greece', Director-General for Employment, Social Affairs and Inclusion - European Commission, 2022.

<sup>&</sup>lt;sup>28</sup> Simoni Tzouganatou, "Nothing About Us, Without Us": Disabled People in the Greek Labour Market', EduTrip.

<sup>&</sup>lt;sup>29</sup> Ibid.

<sup>&</sup>lt;sup>30</sup> Ministry of Education Singapore, 'Support at special education schools'.

 $<sup>^{31}</sup>$  Ministry for Social and Family Development Singapore, Parliamentary Questions 'Programmes and schemes to help adult persons with special needs or disabilities', October 2023



"No matter where you are in life – schooling years, early career, mid-career or silver years – you will find a variety of resources to help you attain mastery of skills. Skills mastery is more than having the right paper qualifications and being good at what you do currently; it is a mindset of continually striving towards greater excellence through knowledge, application and experience"<sup>32</sup>

It's targeted at individuals as well as companies to help upskill and reskill, with employers they are also providing "SkillsFuture Enterprise Credit (SFEC) to encourage employers to embark on enterprise and workforce transformation"<sup>33</sup>. Whilst neurodiversity is not explicitly mentioned, there is the potential to see the possibilities of companies receiving funding to better support and incorporate those with neurodiversity into the workforce.

In addition to programmes, the Government also has a wage support scheme via the Enabling Employment Credit (EEC): 'The EEC provides up to 20% wage support for employees with disabilities earning below \$4,000 per month, capped at \$400. More support is provided to encourage the hiring of persons with disabilities who are long-term unemployed and are more likely to be financially reliant on their families. Employers who hire persons with disabilities who have not been working for at least six months will receive an additional 20% of wage offsets, capped at \$400 per month per employee, for the first nine months. In 2022, close to 6,600 organisations received the EEC and collectively employed more than 10,000 employees with disabilities, including close to 2,000 who had not been in work for at least 6 months. The Workfare Income Supplement (WIS) also provides additional support to lower-income workers, including persons with disabilities, by supplementing their income and CPF savings'<sup>34</sup>

## UK

#### **Key takeaways:**

- The UK removed a disability quota system after it wasn't being supported or utilised appropriately.
- 1 in 4 British construction workers are neurodiverse with 38% of them having told no one about their diagnosis for fear of stigma.

A 2023 study by the National Federation of Builders about neurodiversity in construction. 1 in 4 construction workers considered themselves to be neurodiverse in some way, with 17% receiving a formal diagnosis. Whilst a lot of statistics are encouraging, there still remains some stigma, with 36% of neurodiverse construction workers having not told anyone at work about their condition, with 38% of neurodiverse construction workers believing that there is no or not much empathy for workers with neurodiversity  $^{35}$ 

In exploring stigma and the misunderstandings and lack of knowledge on neurodiversity there are several elements that have been mentioned:

<sup>&</sup>lt;sup>32</sup> SkillsFuture Singapore.

<sup>&</sup>lt;sup>33</sup> SkillsFuture Singapore.

<sup>&</sup>lt;sup>34</sup> Ministry for Social and Family Development Singapore, Parliamentary Questions 'Programmes and schemes to help adult persons with special needs or disabilities', October 2023

<sup>&</sup>lt;sup>35</sup> NFB, 'Neurodiversity in construction', 2023.



A programme was established called LEANS (Learning About Neurodiversity at School) as a way to reduce stigma and bullying of neurodivergent children by educating all children about neurodiversity<sup>36</sup>

The UK did have a disability quota system, established in 1944, however it was abolished in 1994 after it was found that only a quarter of employers knew about the quota and that there was very minimal enforcement, with only 1 in 5 employers complying. In an analysis of what the problem was with the system it was noted that the quota system 'was not really offering any advantages; therefore, disabled people did not bother to register. This resulted into a situation where supply and demand did not match, and companies were unable to meet the 3 percent quota'<sup>37</sup>.

The Department for Education commissioned guidance from the Autism Education Trust (AET) for teachers, examination officers and award bodies on making some Maths and English exams more accessible for autistic students. Whilst this was only for English and Maths, the guidance and findings are applicable much wider. The recommendations focused on two key areas: student specific accommodations and exam papers. With student specific accommodations it was looking at understanding the needs of each learner, including areas such as difficulties with social interaction which could come in the form of responding to questions from invigilators, or with formal exam settings which may cause sensory sensitives for instance the lights in the room or the sound of a clock<sup>38</sup>.

The disability equality charity in England and Wales: Scope, explores what is 'reasonable' with regards to reasonable adjustments and exams in colleges, universities, apprenticeships, and traineeships<sup>39</sup>. The legal right to reasonable adjustments is for those who are defined as 'disabled', under the Equality Act 2010. Unfortunately the Equality Act 2010 doesn't define 'reasonable', leaving it open to interpretation, with it depending on what the learner needs and the difference it would make, the cost, practicality & effectiveness and disruption and health and safety. With regards to written exams Scope argues that these should be adjustable, providing examples such as moving the learner to a smaller room without other students, comfort breaks, dictating to a notetaker, duration, and/or setting the exam timetable to meet the needs of the learner, such as if their condition is better in the morning or afternoon. Scope argued that practical assessments where the learner has to show skills that they know are harder to make adjustments for and that some proposed adjustments may not be considered reasonable. They give the example of if a skill required is showing up to work on time getting extra time would not test their ability to do that so wouldn't be reasonable<sup>40</sup>.

In a paper from Sheffield Hallam University, they define the different types of assessments (which are also in the definitions box at the beginning of this paper) which can be adapted to support disabled students which are all undertaken by Sheffield Hallam University<sup>41</sup>:

- **Adapted assessment** they define as where the task remains the same but the conditions of the assessment could be different for instance a different location, length of time to complete it, means of undertaking it (e.g., via computer), timing (morning or

<sup>&</sup>lt;sup>36</sup> Zahir et al, 'Short report: Evaluation of wider community support for a neurodiversity teaching programme designed using participatory methods', Autism, 2024.

<sup>&</sup>lt;sup>37</sup> Tonio Axisa, 'Removing the disability quota system; can this provided a different context for understanding the requirements for integrating persons with disabilities into the labour market?', August 2021

<sup>38</sup> Nora Gardiner, 'Making exams accessible for autistic students', National Autistic Society, October 2018

<sup>&</sup>lt;sup>39</sup> Scope, 'Reasonable adjustments in college and university education', May 2023

<sup>40</sup> ibid

 $<sup>^{\</sup>rm 41}$  Paddy Turner, 'Definitions of adapted, alternative and inclusive assessments', Sheffield Hallam University Blog, October 2013



- afternoon), and/or accessibility of the exam material (different coloured paper, presentation of material).
- **Alternative assessment** is defined as a different assessment prepared specifically for disabled students which aren't available for non-disabled learners. This new assessment must still meet the learning outcomes and equivalent marking criteria, for instance an oral presentation.
- **Inclusive assessment** is where the same assessment is taken in the same way by all students, for instance a portfolio assessment.

The author does argue that whilst these will help satisfy the obligations of the university to the Equality act, with the first two assessment types there could be issues of equivalence. A different experience for disabled learners could also lead to 'uncomfortable feelings and misunderstandings for non-disabled students, disabled students and tutors alike...and leads some to avoid taking up their right to a more equal assessment'. <sup>42</sup> Having strong policies and communication in place to help everyone understand why there are different assessment types for different people can help reduce some of these issues.

## **USA**

#### **Key takeaways:**

- Adaptive assessment can be/are extremely limited.
- Only 1.3% of apprentices nationwide self-identified as people with disabilities.
- Community College are creating programmes to train and support neurodiverse learners specifically.

In an ILO study on neurodiversity in education, it mentions that 'In the United States all children and youth (ages 3-21) who are diagnosed with one of thirteen recognised learning disabilities are entitled to free public education through the Individuals with Disabilities Education Act (IDEA). The legislation also requires schools to provide learning environments, activities and assessments personalised to the specific student's needs, including whether mainstream inclusion is the best option. Individualised Education Programs (IEP) additionally require all students to have a transition plan in place for their future workforce involvement'<sup>43</sup>.

It's estimated that there are roughly 50 million neurodivergent people in America, and of those, an estimated 30-40 percent are unemployed, with potentially up to 85% of autistic people unemployed<sup>44</sup>. Community colleges are a growing place for neurodiverse learners, one example provided is Lone Star College in Houston. They have established a four-year programme called 'lifePath', which is a 'post-secondary educational program for neurodiverse students...to assist students as they develop independence, exercise self-determination, increase knowledge of college-level academic expectations, practice the social expectations necessary for success...and engage in opportunities for career exploration'<sup>45</sup>

'The Individuals with Disabilities Education Act (IDEA) was originally called the Education for All Handicapped Children Act of 1975 (EHA). President Gerald Ford signed the legislation with the goal of ensuring that all children with disabilities have access to a "free appropriate public

<sup>&</sup>lt;sup>42</sup> ibid

<sup>&</sup>lt;sup>43</sup> Tracey Burns, 'Trends Shaping Education Spotlight 12: Neurodiversity in Education', ILO & OECD, 2016

<sup>&</sup>lt;sup>44</sup> Jessica Blake, 'Creating Career Pathways for Neurodiverse Students', Inside Higher Ed, 2023

<sup>&</sup>lt;sup>45</sup> Lone Star College, 'lifePATH 2023-2024 Student Handbook'



education," known as FAPE. IDEA requires all schools and districts receiving federal dollars to provide students with disabilities a public education designed to meet their unique needs and prepare them for further education, employment, and independent living. Part B of the law provides for special education and related services for children ages 3-21.'46

In the apprenticeship space in Texas, Adaptive Construction Solutions (ACS) focuses on recruiting and supporting disabled apprentices in the clean energy and steel construction sectors, 551 apprentices between 2018-2021<sup>47</sup>. The Department of Labour is creating incentives and support to encourage more employers to hire and support neurodiverse learners as well as for (potential) apprentices<sup>48</sup>.

## **Summary Analysis of International Practice**

One of the biggest challenges with this literature review is that there is very little information or research specifically focused on people with neurodiversity. A lot of the research which has been included here has focused on disability in general, where neurodiversity may lie but is not specifically focused on people with neurodiversity, the reason for this is, there is very little out there on the subject, making this report even more important.

Each country in this literature review supports and utilises neurodiversity in policy and in education in different ways. One of the starkest differences is the level of support which neurodiverse people can have in different countries. In Greece and Germany for instance their levels of support are significantly more embedded, and more accessible, completely different to say the USA or UK.

The level of support for neurodiverse people in assessments is quite dependable on the situation and the country. The list of types of assessment from Sheffield Hallam University was a useful way of thinking of the different methods available and how these can be produced on a larger scale and in a way that works best for everyone.

The wage support schemes and employer-mandated hiring are also widespread with various percentages and limitations but provide some useful data to review opportunities and where these work best.

## **DOMESTIC**

## New Zealand national policies & general information

In New Zealand like the UK, there has been a shift to 'mainstreaming' students, rather than have special schools as the norm for neurodiverse and other learners with disabilities. As Dr Jude MacArthur explains, "Under the UN Convention on the Rights of Persons with Disabilities, we

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<sup>46</sup> Brain Injury Association of America. (Individuals with Disabilities Education Act)

<sup>&</sup>lt;sup>47</sup> Department of Labor, 'Partnership on Inclusive Apprenticeship'.

<sup>&</sup>lt;sup>48</sup> Ibid.



have obligations to shift money from segregated settings into the development of inclusive school communities. I'm not sure we're doing that very well." Since 1989, New Zealand's school system has been 'mainstreaming' students. "With mainstreaming, we'd see disabled kids in our communities head off to the local school,"..."But there was a lot of 'You can come to our school now, but don't expect us to change to accommodate you."

In terms of statistics of how many people are neurodiverse in New Zealand there are varied estimates, Professor Karen Waldie, a neuroscientist the University of Auckland estimates 'one in ten New Zealanders' have some form of neurodivergent thinking<sup>50</sup>. Diversity Works NZ estimates that 'up to a fifth of employees [are] likely to be neurodivergent'<sup>51</sup>.

In terms of the comfort level of those with neurodiversity sharing their diagnosis at the workplace, the 2022 New Zealand Workplace Diversity Survey revealed that 63% of neurodivergent workers reported that their organisation didn't know that they had neurodiversity. A 'third [of those with neurodiversity] reporting their condition has negatively affected their career advancement'52

New Zealand has a Learning Support Action Plan 2019-2025 for which its top three priorities were 'rolling out hundreds of new "learning support coordinator" roles to schools; strengthening screening and early identification of learning needs including dyslexia, dyspraxia and giftedness; and strengthening early intervention for the youngest children. It also promised more support for neurodiverse children with moderate needs, more opportunities for gifted children, and more support to stop children dropping out of school'53. The Neurodiversity in Education Coalition however, (which comprises Autism New Zealand, New Zealand Centre for Gifted Education, Dyslexia Foundation of New Zealand, ADHD New Zealand) argued that 'only 40 percent of schools had access to a learning support coordinator and there was little to no improvement in early intervention, screening or training for teachers'54.

In a study on the experiences of neurodivergent children and those supporting them in New Zealand's education system one element which was highlighted as being currently inadequate when relating to learning support and inclusion in education was relating to teacher 'training on adaptations for diverse learning needs and neurodivergence... and teachers have difficulty finding relevant professional learning and development and external guidance. More than a third of SENCOs were only "partially confident or not confident to carry out their role", which is not surprising given there is no requirement for SENCOs to have specific qualifications or to undertake training. It is little surprise, therefore that there is no consistency between schools in how they support neurodivergent students, and big variations in competency between staff' 55.

The New Zealand Qualifications Authority (NZQA), define Special Assessment Conditions (SAC) as 'Every student has a right to express their knowledge, skills and understanding without being unfairly disadvantaged... Special Assessment Conditions are available to meet a range of physical, emotional, sensory, medical, and learning needs. They provide flexibility in the way learners can access and demonstrate their learning. They do not make assessments easier or

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<sup>&</sup>lt;sup>49</sup> Denise Montgomery, 'The truth about 'normality': there may be no such thing', University of Auckland, November 2023

<sup>50</sup> Ibid.

<sup>&</sup>lt;sup>51</sup> Diversity Works NZ, 'Neurodivergent workers overlooked in New Zealand', July 2022

<sup>&</sup>lt;sup>52</sup> Diversity Works NZ, 'Neurodivergent workers overlooked in New Zealand', July 2022.

<sup>&</sup>lt;sup>53</sup> John Gerritsen, 'Government action plan failing to deliver for neurodiverse students, support groups say', RNZ, June 2023.

<sup>&</sup>lt;sup>54</sup> Ibid.

<sup>&</sup>lt;sup>55</sup> Dr Nina Hood et al, 'The illusion of inclusion', 2024, The Education Hub.



impact their validity.'56Whilst NZQA list some examples of the conditions, for instance rest breaks, access to quiet spaces, use of a reader or writer assistant, they do explain that students 'may need different supports in different assessments. The supports, including SACs, will be adjusted as needed'57.

The University of Auckland has produced advice on neurodivergence for its managers and staff, explaining what the term means as well as strategies and rationale for its usefulness'58. The strategies for neurodivergent employees include knowing their limits and strengths, as well as helping them decide about whether to identify their neurodivergence, to who, when, and where<sup>59</sup>.

Te Pou is a national workforce centre for mental health, addiction, and disability in New Zealand. As part of this they have created an online course called 'Understanding Neurodiversity' which was designed to help the workforce learn more about the language, underpinning values and person-centred approaches necessary to provide good support to neurodiverse people and their whānau<sup>60</sup>. The e-learning introduces the concept of neurodiversity. The learners will learn a bit about the term itself, as well as the different groups of people that identify as neurodiverse. It covers several of the more prevalent impairments and describes important aspects of these conditions which can influence a person's support needs<sup>61</sup>.

## **Cultural**

Understanding neurodiversity from different lens' is crucial, especially in a bi-cultural country such as New Zealand. To that end we are taking our cue for this from Mel Green's piece on understanding cultural perspectives on neurodiversity where she writes that "due to dominant perspectives and beliefs about ethnicity worldwide, the [neurodiversity] movement's universal acceptance remains a challenge. Addressing the dynamics of neurodiversity requires considering racial and cultural differences and their influence on the identification and understanding of neurological differences."62

To-date there are very few official statistics regarding New Zealand's neurodiversity, especially from a cultural perspective. In a study which focused on new autism diagnoses between 2012-2016 in children between 0-19 by the Hutt Valley District Health Board, of the 228 autistic young people in the study, 55.2% identified as Pakeha, 23.6% Māori, and 4.3% Pasifika<sup>63</sup>.

In an article exploring neurodiversity from a British cultural lens, they explain that "Asian school pupils are half as likely to be identified with autistic spectrum disorders (ASD) compared to white British pupils. This underrepresentation may be attributed to the use of diagnostic criteria that are primarily based on norms for white British children"<sup>64</sup>.The need to ensure that

<sup>&</sup>lt;sup>56</sup> NZQA, 'Special Assessment Conditions', December 2023.

<sup>57</sup> Ibid.

<sup>&</sup>lt;sup>58</sup> University of Auckland, 'Neurodivergence at work'.

<sup>&</sup>lt;sup>59</sup> Ibid.

<sup>&</sup>lt;sup>60</sup> Te Pou, 'What is neurodiversity'.

<sup>61</sup> Ihid

<sup>&</sup>lt;sup>62</sup> Mel Green, 'Understanding cultural perspectives on neurodiversity'

<sup>&</sup>lt;sup>63</sup> Emily Acraman, 'Autism prevalence in New Zealand', Altogether Autism, 2021.

<sup>64</sup> Mel Green, 'Understanding cultural perspectives on neurodiversity'



each analysis and comparative study accurately reflects each culture will be of paramount importance to ensure validity. In the same study it continues that 'black Caribbean and mixed white and black Caribbean pupils are twice as likely as white British pupils to be identified as having Social, Emotional, and Mental Health (SEMH) needs, including conditions like ADHD. This overidentification could stem from socio-economic disadvantages within these communities or biases and low expectations among teachers'65.

In the Diversity Works 2022 report they found that 'Māori, Pacific People, people with disabilities and transgender/gender diverse people are the four groups that organisations report having most difficulty recruiting into their workforce. This was more of an issue for private sector organisations than public sector workplaces'<sup>66</sup>.

In a study on Pasifika and neurodiversity, they mention that a New Zealand Autism Spectrum Disorder Guideline was created to support decision makers to improve outcomes for people's lives across education, social domains and health<sup>67</sup>. Unfortunately, the analysis mentioned that:

'it appears that little traction has been made towards these recommendations, likely due to little resourcing and no follow-up or incentivisation for health professionals to adapt their practice'68.

In a sector with limited resources, where there has been very useful support created, it is disheartening to see that it is not being amplified and utilised appropriately.

The New Zealand Qualifications Authority (NZQA) have created a table listing different learner barriers with their relevant special assessment conditions (SAC's). For 'Attention-Deficit /Hyperactivity Disorder, Disruptive, Impulse-Control and Conduct Disorders', they have listed the SAC's as Separate Accommodation and Rest Breaks. Autism Spectrum Disorder has listed Separate Accommodation, Computer, Rest Breaks<sup>69</sup>.

The Ministry of Education has been working on understanding and developing support for neurodiverse Māori ākonga, and to reflect te ao Māori perspectives, they have also selected a name for neurodiversity in Māori, 'kanorau ā-roro'. One of the recommendations is 'tailoring for individual ākonga and their specific needs and aspirations'. As a lot of Māori knowledge is still tāngata Māori rather than in print, there is still a lot of work to do in the space to better understand.<sup>70</sup>

## **ENGAGEMENT & CALLS TO ACTION**

Building on the findings from the literature review, further analysis and consultation with industry experts has been undertaken to explore the range of skillsets and methodologies

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<sup>&</sup>lt;sup>65</sup> Mel Green, 'Understanding cultural perspectives on neurodiversity'

<sup>&</sup>lt;sup>66</sup> Diversity Works NZ, 'Neurodivergent workers overlooked in New Zealand', July 2022

<sup>&</sup>lt;sup>67</sup> Rochelle Nafatali, "E lē Ma'i, o le Malosi!" (He's not Sick, He's Strong!): Pacific Parents' Journey of Raising Autistic Children in Aotearoa', Massey University, 2023.

<sup>&</sup>lt;sup>68</sup> Rochelle Nafatali, "E lē Ma'i, o le Malosi!" (He's not Sick, He's Strong!): Pacific Parents' Journey of Raising Autistic Children in Aotearoa', Massey University, 2023.

<sup>&</sup>lt;sup>69</sup> SAC support for some learner needs, NZQA, May 2024.

<sup>&</sup>lt;sup>70</sup> Michelle Dawe, 'Briefing Note: Understanding neurodiversity from a tea o Māori perspective', 2021.



currently in place across New Zealand, as well as those that could/should be designed and implemented.

Given the broad scope of neurodiversity—encompassing conditions including dyslexia, dyspraxia, autism, and attention-deficit hyperactivity disorder—this paper is focusing on broader strategies that can support multiple facets of neurodiversity. In this second phase of the research, we are identifying existing models that have proven successful, as well as identify other models which could be best placed to support those with, and also those who support those with neurodiversity. One of the challenges that has been identified in the research is that:

neurodiversity is often subsumed under the broader category of disability, but is not always specifically addressed in company policies, training, or discussions around disability.

Within education, the goal is to enhance support in assessments and training on a broader and more consistent scale. For neurotypical individuals, there is existing training, but this project seeks to evaluate what is most effective, what can be further promoted or expanded, and how consistency can be achieved to ensure that knowledge is effectively shared and understood by all stakeholders.

In discussions with stakeholders one element that was made very clear was that nobody needs to feel sorry for anybody who's neurodivergent. Supporting neurodiversity is just an opportunity to leverage some of the things that come naturally to them, an approach that has not been taken up often, and with huge opportunities.

The approach that has been taken is that it's not about "what does Johnny, as a neurodiverse person, have to do differently?" It's "what does the system have to do around Johnny?" It doesn't have to be because people panic when we talk like that, it doesn't have to be onerous because, similarly to the argument that what works best for Johnny works well for everybody else, it's very similar. When designing an assessment for a neurodiverse learner, it's not going to disadvantage or fail to benefit neurotypical people either. It is that similar sort of shift that is being explored here too.

Whilst this paper is focused on recommendations and calls to action from a vocational education perspective, it is impossible to fully reflect the research that has been done, just from this perspective. The pre-vocational space can lead directly into the vocational, and therefore has a significant impact, not just on the vocational space, but on the learner. The interventions that have been included here for the pre-vocational space, we believe could result in significant positive impacts, therefore meriting their inclusion here.

The intention with this paper was for it to be a call of action, to be a document which could be applied, to have real-world value. To that end, for each of the sections below, Pre-vocational; Employers; Providers; Government; Cultural bodies; Assessment designers; Learners & Workers, there is information on each but also at least one call to action, tangible actions which can be taken to support those with neurodiversity, and those who are supporting those with neurodiversity.

## **Pre-Vocational**

Vocational education is almost the last step in the educational journey, there is a significant amount that happens prior to this in which neurodiversity is not being identified or addressed. Whilst this paper is focusing on vocational education, we believe that there are several elements



which, if utilised appropriately prior to vocational education occurring, could create significant benefits to learners as well as the vocational industry as a whole.

## Teacher training

In New Zealand, there is no explicit measure requiring neurodiversity training to be a mandatory element of teacher training at any level. If primary school teachers were given the tools to be able to identify potential neurodiverse learners, and know how best to communicate that both within the school and with the parents/guardian of the child, then by the time that child is in vocational education or the workplace, there will have been significant steps to both normalising neurodiversity in the classroom, have the child understand tools and triggers to support, and have increased confidence in themselves, to be able to be willing to make a disclosure about their neurodiversity to best support themselves. Having some time in teacher training devoted to understanding the different types of neurodiversity, and tools to best support them, and to get other support, as well as ideally regular continuous professional development in neurodiversity has the potential to make a significant difference to learners, and make New Zealand teachers more competitive on the world stage.

#### Teacher Aides

Teacher Aides in New Zealand are on the frontline of supporting neurodiverse learners and are usually very involved with neurodiverse learners. CPD and support varies significantly between schools, with much of the training informal, with limited access to consistent professional development tailored to the complexities of neurodiversity. While some schools offer guidance, the availability of structured support is often dependent on individual school priorities and budgets. The absence of nationally mandated training or certification for teacher aides exacerbates this gap, leaving them to rely on ad-hoc resources or personal initiative to build their knowledge. Despite the challenges, many teacher aides demonstrate remarkable dedication, supporting neurodiverse learners with limited resources. Addressing these disparities through comprehensive training and clearer pathways for professional development could enhance outcomes for both teacher aides and students alike.

## Transition to Work Programmes

For learners who struggle in traditional academic settings, alternative education pathways such as the below often become the default recommendation. While these pathways provide valuable opportunities, they also attract a disproportionate number of learners who may have undiagnosed neurodiverse conditions. Without adequate recognition or tailored support, these individuals face challenges in navigating programmes designed with neurotypical learners in mind. This reality underscores the pressing need for inclusive strategies that address the unique learning needs of neurodiverse students in vocational education settings, particularly as initiatives aimed at reducing barriers to education expand their reach.

#### Existing Initiatives: Youth Guarantee and Trades Academies

The Youth Guarantee initiative, launched by TEC, aims to reduce barriers to tertiary education by offering free courses for students aged 16-24 who lack formal qualifications. The program allows young people to obtain industry-recognised credentials while gaining practical skills that improve their employment prospects. Similarly, Trades Academies provide vocational pathways for high school students to complete industry training, preparing them for specific trades or further study. However, these programs, while beneficial, do not currently offer targeted



support specifically for neurodiverse learners. For example, young adults with ADHD or dyslexia might benefit from practical, hands-on learning, additional time for tasks, or visual aids.

#### Mentorship Programs with Industry Partnerships

Establishing partnerships between vocational institutions and industry could facilitate mentorship programs for neurodiverse learners. For instance, a neurodiverse learner completing a trades academy course in carpentry could be paired with an industry mentor who guides them through both practical skills and workplace expectations. This mentor might provide additional instruction on how to use tools, understand blueprints, and follow safety procedures, helping the learner gradually acclimate to the job environment. Additionally, mentors trained to understand neurodiverse needs—such as clear communication and structured task breakdowns—can make the transition to the workplace smoother and reduce potential misunderstandings.

#### Apprenticeship and Job Coaching Support

While apprenticeships are a common entry point into many sectors, neurodiverse apprentices often require job coaching and additional support in the initial stages. In this context, job coaches could work alongside apprentices to help them navigate tasks, manage time effectively, and adapt to the fast-paced nature of the work.

#### Calls to action:

- By integrating neurodiversity-specific support into existing transition to work
  programmes, such as through enhanced access to learning accommodations or
  specialised career counselling, the Youth Guarantee and Trades Academies could
  become more inclusive.
- Introducing neurodiversity training as part of the mandatory training that all teachers
  take would provide a huge opportunity to allow for earlier identification of people with
  neurodiversity, as well as supporting those with neurodiversity. Having that
  identification and earlier support has the opportunity to also help normalise
  neurodiversity in the classroom.
- Within individual schools/regions, introducing neurodiversity training as part of their annual CPD for teachers and for teacher aides has the possibility to bring about change quickly. Even one hour of introducing the topic and some methods to support could help a lot of learners.

# **Vocational Education**

## **Employers**

## Wider Training

While organisations such as Ako Aotearoa offer extensive training, with a particular focus on dyslexia and the Dyslexia Quality Mark, there is the potential to broaden this to encompass wider aspects of neurodiversity.



Ako Aotearoa has already begun establishing some very useful pieces of work within neurodiversity which are helping already, and have the potential to expand/improve more outcomes. The Dyslexia-Friendly Quality Mark (DFQM)<sup>71</sup> is a programme developed to allow organisations to "demonstrate their commitment to understanding and supporting the unique needs of dyslexic learners". There are three core elements for which the DFQM aligns with the educational goals of an organisations:

- "» Raising awareness and understanding: The DFQM emphasises the importance of educating staff and learners about dyslexia, thus aligning with the national goal of creating informed and empathetic educational communities.
- » Promoting inclusive teaching practices: By advocating for teaching methods that cater to dyslexic learners, the DFQM supports the broader objective of inclusive and personalised education, ensuring that all learners have access to quality education.
- » Supporting diverse learning approaches: The initiative celebrates different learning styles, encouraging educational organisations to embrace and cater to the varied needs of learners, thereby fostering an environment of diversity and inclusion."

In conversation with Ako Aotearoa, the possibility of the DFQM turning into a Neurodiversity Quality Mark was mentioned, and indeed, that was/is a possibility. There is however difficulty in turning the current dyslexia quality mark into a neurodiverse-friendly mark. Dyslexia isn't the same as autism, ADHD etc. There are some commonalities and some principals are same, but it's a large undertaking to change/adapt it, which requires additional funding. The DFQM programme itself is robust, taking on average a year for an organisation to undertake and get approval. There are many organisations attempting to get the approval which is encouraging. At present, funding is the main restriction on Ako Aotearoa's ability to expand and further utilise the programme.

## Raising Awareness

As mentioned throughout this paper, neurodiversity is a many faceted umbrella-term encompassing many different elements. The element which is most prominent, both in terms of public understanding, and in research, is dyslexia. There is significantly more support for dyslexia, than any other element of neurodiversity, a university specifically for dyslexia was even launched this year<sup>72</sup>. To that end, employers, providers etc, 'accept' the term dyslexia and know that it is real, tangible, and that people with it genuinely require support, and are generally happy to provide it. Whilst this is brilliant for people with dyslexia, that same level of understanding, acceptance, and support is not true for the other terms under neurodiversity or for neurodiversity in general. When undertaking the research for this report, dyslexia was by a significant margin, the most readily available element to be explored, the need therefore to raise awareness of all aspects of neurodiversity through research is intrinsic to better supporting those with any aspect of neurodiversity bar dyslexia, and to better support those who are supporting people with different elements of neurodiversity too.

A recent report on dyslexia within New Zealand's agricultural sector highlights a significant need for increased awareness and support to reduce the stigma surrounding the condition,

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<sup>&</sup>lt;sup>71</sup> Ako Aotearoa, 'Embracing Inclusivity: Introducing the Dyslexia-Friendly Quality Mark (DFQM).

<sup>72</sup> https://www.madebydyslexia.org/dyslexicu/



which in turn can be expanded upon with wider neurodiversity<sup>73</sup>. The report notes that as regulatory and environmental demands increase, dyslexic farmers face heightened challenges with paperwork and compliance tasks. Key themes emerging from interviews include the persistence of dyslexia as a stigma, the need for mentorship support, and the limited availability of current resources tailored to the needs of dyslexic individuals.

The Resource Teaching and Learning Behaviour (RTLB) service, a New Zealand Ministry of Education initiative, serves as a model for supporting individuals with diverse learning needs. Targeted primarily at students aged 1 to 10 with learning or behavioural challenges, including Māori and Pasifika students, RTLB aims to upskill teachers and create inclusive educational environments. Operating through regional clusters, the RTLB service works collaboratively with schools to manage support requests and ensure consistency across regions. Expanding similar support mechanisms within the agricultural sector could provide neurodivergent farmers with more reliable resources.

Logan Wallace, a dyslexic sheep and beef farmer and the 2018 FMG Young Farmer of the Year, openly discussed dyslexia's impact on his career, calling for structural changes to reduce the theory-heavy focus in agricultural contests and training programs, which can deter neurodiverse individuals. Wallace values practical, visual resources, such as Beef + Lamb New Zealand's fact sheets and grazing guides, which simplify complex information through visuals. With limited internet connectivity in rural areas, Wallace and others note the potential for councils to provide in-person workshops or dyslexia-focused support.

Further support initiatives include multimedia resources like videos and podcasts on agricultural topics, developed by Beef + Lamb New Zealand, which cater to various literacy levels and can be accessed flexibly by farmers, and provide a roadmap for other industries to follow suit. Such resources are seen as valuable tools for dyslexic farmers who benefit from visual and auditory formats over text-based materials.

## Building a Culture of Continuous Learning

Organisations should be encouraged to view neurodiversity training as an ongoing commitment rather than a one-off event. This could involve regularly updating training materials to reflect current research and integrating neurodiversity awareness into everyday workplace practices. By making it an ongoing commitment, more time can be spent on individual aspects under neurodiversity, rather than a one-off piece of training which would not be as useful over time.

#### **Practical Training Applications**

Construction, infrastructure, food & fibre, with their high reliance on teamwork, spatial reasoning, and hands-on skills, can benefit immensely from continuous learning programs focused on neurodiversity. Workers with ADHD, for instance, may excel in dynamic, hands-on roles but benefit from specific accommodations, like visual timetables, to support task planning and focus.

#### 1. Scenario-Based Workshops

Scenario-based workshops allow teams to explore real-world situations where neurodiverse colleagues may face specific challenges or excel uniquely. For example, construction teams can undergo training on how to manage high-pressure tasks like onsite problem-solving, addressing both the strengths and potential struggles of

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<sup>&</sup>lt;sup>73</sup> Kylie Brewer, 'Do Current Extension Practices in New Zealand Cater for Families with Dyslexia?'.



neurodiverse team members. This could include understanding ADHD-related traits, like thriving under dynamic conditions but needing structured time management tools.

#### 2. Learning from Case Studies and Peer Insights

Case studies from other firms or industries embracing neurodiversity can be shared with employees to build empathy and foster best practices. By periodically reviewing case studies where neurodiverse employees have positively impacted construction projects, organisations can build understanding and stimulate innovative approaches.

#### 3. Building Neurodiversity Awareness into Management Practices

Managers play a crucial role in sustaining inclusive practices. For neurodiversity training to be effective in the long run, managers must model these practices. Integrating neurodiversity awareness into management training ensures that managers are equipped to provide the necessary accommodations and foster an inclusive team culture. Managers could receive training on how to adjust workloads and communication methods, making information easily accessible to neurodiverse team members who may struggle with overly complex verbal instructions.

#### Call to action:

• Incorporate neurodiversity awareness into CPD for employees and managers in organisations to foster a culture of learning but also one of openness to encourage those with neurodiversity to be able to share it and get the required support.

## **Providers & Assessment Designers**

#### Scenario-Based Assessments

Scenario-based assessments allow neurodiverse learners to demonstrate their skills through real-world tasks in simulated environments. This approach focuses on practical problemsolving, which can better reflect a learner's competence in job-specific tasks.

These types of assessment are being widely used already, but there is also a lack of consistency between providers around this. For those elements which are theory-based and are presently assessed via written assessment, there are already opportunities for learners to undertake these using assistive technology. One organisation who delivers assessments for providers did note however, that a problem with assistive technology where it requires the learner to either engage one-on-one with the assessor as a discussion or to talk into a talking pen to record their responses, is that it reduces the number of learners who can be in that room to just one, meaning from a financial perspective there is a significant cost-burden, and that funding for that is not necessarily where it needs to be. This then results in issues when it might come to resits etc.

## Portfolio Assessments

Portfolio assessments can provide a more comprehensive view of a learner's abilities by allowing them to compile a body of work over time. This method reduces the pressure of high-stakes testing and offers a more flexible way to demonstrate skills through project plans, task documentation, and process reports.

Portfolio assessments are particularly beneficial for neurodiverse learners, such as those with ADHD, autism, or dyslexia, as they allow students to work at their own pace, reduce the pressure of a single exam, and showcase their practical skills and knowledge in diverse ways.



Learners can curate a body of work that demonstrates their progress and strengths, highlighting both technical skills and core skills like problem-solving, critical thinking, and innovation. For many neurodivergent students who thrive in creative and practical tasks, portfolio assessments offer a fairer, more comprehensive method of evaluation.

## Assistive Technologies

Incorporating assistive tools like speech-to-text software or visual organisers can help neurodiverse learners better express their knowledge. In sectors like infrastructure for instance, digital tools for mapping out construction projects can offer a more accessible form of assessment for those who find traditional exams challenging.

To effectively integrate assistive technologies there are four key points to consider:

#### 1. Providing Training and Support

By offering introductory sessions and ongoing support, educators can ensure that neurodiverse learners feel comfortable with the technology. For example, instructors might hold workshops on using speech-to-text software, providing tips on optimizing the tool and troubleshooting any issues that arise.

#### 2. Allowing Flexibility in Assessment Formats

Flexibility in how assessments are presented is crucial for fully integrating assistive technologies. For instance, learners could choose between presenting a report through a speech-to-text-generated document or submitting a digital blueprint using CAD software. Allowing these choices empowers learners to select tools that best align with their abilities, ensuring fair and accurate assessment.

#### 3. Developing Clear Rubrics for Technology-Enhanced Assessments

Adjusting assessment rubrics to evaluate the content quality rather than the format is key. Rubrics might focus on how well a learner demonstrates planning skills or spatial understanding, regardless of whether they present their project through text, video, or visual organisers. By focusing on competency rather than format, educators can ensure that assessments remain inclusive and accessible.

#### 4. Offering Access to Technology Resources

Most providers do have access to assistive technology, however, some of these can be quite expensive and they may only have one or two of a particular type of product, which can limit the usefulness if a learner can only use it very occasionally. The other issue that arises is where the learner has to speak and the technology records the words, it limits the number of learners able to complete an assessment in one room, making it significantly more expensive in some cases. Where this is the case, returning to the assessment design and exploring whether there are alternatives to just an examination, for instance the possibility of portfolio/continuous assessment.

## Universal Design for Learning (UDL)

UDL is a framework that promotes inclusive assessment design for all learners, including those with neurodiversity. It advocates for offering multiple means of representation, expression, and engagement, such as oral presentations, visual projects, or practical demonstrations, in place of traditional written exams.



It is an educational framework aimed at creating inclusive and accessible learning environments that accommodate the varied needs of all students, including those with neurodiversity. By integrating UDL principles, educators can address barriers to learning and assessment and foster a more equitable system that supports neurodiverse students in demonstrating their strengths<sup>74</sup>.

#### UDL Principles: Multiple Means of Representation, Expression, and Engagement

UDL's core principles centre around offering students multiple pathways to understanding, demonstrating, and engaging with learning material. Specifically, UDL encourages educators to incorporate:

- 1. **Multiple Means of Representation** Presenting information in diverse formats so all learners can access content in ways that suit them best. This can include visual aids, audio resources, and tactile learning tools.
- 2. **Multiple Means of Expression** Allowing students various methods to demonstrate their knowledge, such as through visual projects, oral presentations, or hands-on activities, rather than solely relying on traditional written exams.
- 3. **Multiple Means of Engagement** Providing different ways for students to connect with and find motivation in learning activities, which is especially crucial for maintaining the engagement of neurodiverse learners<sup>75</sup>.

#### **Implementing UDL:**

#### 1. Alternative Assessment Options

In place of traditional exams, UDL suggests offering students multiple ways to demonstrate their learning. For example, a student with dyslexia might choose to create a visual timeline or video presentation instead of writing an essay. Similarly, a student with ADHD could perform a dramatic monologue or engage in a group project that emphasises their verbal strengths and social skills rather than completing a formal written test.

These alternative assessments are particularly beneficial for neurodivergent students, who may find conventional exams challenging. The flexibility in assessment formats aligns with UDL's goal of reducing stress and anxiety around standardised testing while ensuring students can engage with learning materials on a deeper level.

#### 2. Integrating Assistive Technology for Multiple Means of Representation

UDL encourages the use of technology to make learning more accessible. In New Zealand, many schools, colleges, and PTE's employ assistive technologies to support neurodiverse learners in processing information. For example, screen readers for students with visual processing challenges or provide audiobooks and voice-typing software for students with dyslexia. Apps like Google Read&Write, offer speech-to-text capabilities that help students express ideas verbally, thereby facilitating participation and comprehension for students who struggle with traditional text formats.

By providing resources that cater to different sensory and cognitive needs, UDL ensures that all students, regardless of their learning profile, have equal access to the curriculum.

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<sup>&</sup>lt;sup>74</sup> Queen Mary University of London, 'Universal Design for Learning'.

 $<sup>^{75}</sup>$  Susan Bruckner and Nora Nunn, 'Universal Design for Learning: Meeting the Needs of Diverse Learners'.



#### Policy and Training Initiatives Supporting UDL in New Zealand

The Ministry of Education, for example, offers professional development resources for teachers that emphasise UDL and culturally responsive teaching. Initiatives such as *Inclusive Education* guides and The Education Hub webinars, which address topics like neurodiversity and UDL strategies, help educators integrate inclusive practices into their classrooms by providing both theoretical and practical support.

Further, organisations including Ako Aotearoa advocate for the UDL framework in tertiary education and promote resources that support learners with diverse needs.

#### Call to action:

 Utilise assistive technology as much as possible but also engaging in a rethink with regards to UDL and assessment design and what is the aim of that assessment, incorporating neurodiverse thinking to ensure that an assessment is suitably designed for someone with neurodiversity.

## Government

# Policy Recommendations for Expanding Neurodiverse Transition Support

Given the unique needs of neurodiverse learners, targeted policy support is essential to ensure that vocational training and employment pathways are truly inclusive. Recommendations for policymakers could include:

#### 1. Funding for Neurodiverse-Specific Programs

Allocating funding specifically for neurodiversity-focused transition programs would enable the creation of customised resources, mentorship initiatives, and on-site job coaching. This funding could support both new programs and adaptations to existing ones like the Youth Guarantee and Trades Academies, ensuring they meet the diverse needs of learners.

#### 2. Employer Incentives and Training

Offering incentives to employers in sectors to participate in neurodiverse-focused transition programs can increase workplace inclusivity. Furthermore, funded training sessions for employers on neurodiversity and inclusive hiring practices can foster environments where neurodiverse employees feel supported and understood.

#### 3. Partnership Models between Institutions and Industries

Encouraging formal partnerships between vocational training institutions and key industry organisations could facilitate mentorship, placement opportunities, and job coaching. By connecting learners directly with industry mentors, these partnerships bridge the gap between training and employment, creating a more seamless transition to work.

#### 4. Lifelong Learning Strategies



In Singapore, they are building a lifelong learning strategy, focused not just on incentivising the individual, but on businesses as well<sup>76</sup>. This push for workplace transformation and deepening learner capabilities is an admirable structure which has the capacity to better support and incorporate neurodiverse workers and would therefore be a useful proposal for other governments to consider.

#### Calls to action:

- The government should be funding and supporting neurodiversity separately to that of disability, to ensure that it is recognised, quantifiable, and visible.
- Employers, industry associations should collaborate, sharing the costs and providing funding and support to train their workers in understanding and making visible, neurodiversity to create a more open environment for people with neurodiversity to feel comfortable sharing it and getting the support that they require.

## **Cultural Response**

## Cultural response

In talking to Pasifika and Māori groups, the most common response was that "it takes a village." Within churches and marae, groups regularly come together, fostering a strong sense of community and mutual support. Funding training sessions to take place in these familiar spaces - places of worship and community centres - was the primary suggestion that emerged from these conversations. Such sessions would provide education on what neurodiversity is and practical guidance on how best to support it. The phrase "people don't know what they don't know" reflects a key insight from this engagement: by making training visible and accessible to the wider community, knowledge about neurodiversity can be more broadly shared and understood.

In almost every place of worship and community centre, there are likely examples of neurodiversity. Without culturally relevant training to dispel myths and provide support strategies however, misunderstandings may persist.

#### Call to action:

Having talks about neurodiversity in trusted community spaces honours the collective ethos of "it takes a village", as well as addresses any misconceptions. This doesn't have to be formal; it can just be short talks once a month about a different facet of neurodiversity, normalising it and showing what support can look like can be incredibly valuable. This approach involves whanau and extended networks in understanding and supporting neurodiverse individuals, promoting inclusivity in a culturally responsive way that aligns with the values of Māori and Pasifika communities. By embedding this knowledge within these spaces, we can provide tools that empower both neurodiverse individuals and their communities to thrive.

<sup>&</sup>lt;sup>76</sup> SkillsFuture Singapore.



## **Learners & Workers**

## Focused training and support

#### **Davis Method**

The Davis Method is a strengths-based approach tailored to neurodiverse learners, leveraging their natural abilities to overcome challenges. It begins with an individual consultation to identify strengths and areas of need, followed by customised programmes incorporating focus and self-regulation strategies, symbol mastery, and visualisation exercises. Symbol mastery, a core technique, uses clay modelling to engage multiple senses, fostering a deeper understanding of letters, numerals, and concepts. Originally designed as a one-on-one intervention, group models are now being trialled in Māori learning environments, offering a cost-effective alternative while preserving effectiveness. By reframing neurodiverse processing as a unique strength, the Davis Method empowers learners with tools for confidence and comprehension, with reported long-term benefits extending to personal and professional relationships. Kip

#### **McGrath**

The Kip McGrath method, which is tailored to address the needs of neurodiverse learners, particularly those with dyslexia and other specific learning difficulties, offers a structured, personalised approach to tuition. Kip McGrath centres conduct a comprehensive initial assessment that identifies each learner's unique challenges and strengths, from this assessment, they develop an individualised learning programme that is continuously reviewed to adapt to the learner's progress. This process ensures that neurodiverse students receive support suited to their pace and learning style, often incorporating active learning methods that are more accessible than traditional rote learning approaches. Strategies can include summarising passages, creating mind maps, and utilising role-play, allowing neurodiverse students to better retain information and build confidence incrementally. Kip McGrath tutors, who are qualified teachers, focus on developing students' confidence and self-efficacy. Following the free assessment there is a cost per session, which can be prohibitive for some, certain employers do provide up to 75% funding for the children of their employees to support.

#### **SPELD**

SPELD New Zealand, or the Specific Learning Disabilities Federation of New Zealand, provides resources and advocacy for individuals with learning disabilities, particularly focusing on dyslexia but also supporting other facets of neurodiversity including dyscalculia and dysgraphia. They do not just focus on young learners but also provide support to adults, as well as supporting employers and educators 77. SPELD offers access to specialist teachers trained to provide evidence-based literacy and numeracy interventions for neurodiverse students. Their approach supports the development of phonological awareness and decoding skills for students with dyslexia, using strategies to address cognitive differences common among some neurodiverse learners. Additionally, SPELD actively raises awareness of neurodiversity in schools and workplaces, promoting inclusivity and understanding while providing ongoing support and guidance for educators, families, and employers to effectively support neurodiverse individuals. There is some funding support available for low-income families.

#### Call to action:

There are many different programmes available to support learners and workers, at whatever age to help with particular elements of neurodiversity (dyslexia is still the most commonly advertised but programmes across all the different facets of

<sup>77</sup> SPELD New Zealand



neurodiversity do exist). Most programmes aren't free, however there can be support available from fundraising as well as from some employers. As a first step on someone's neurodiversity journey, using one of these programmes, even if it's just for the assessment to understand better, they are very worthwhile.

# **Conclusion & Next Steps**

Supporting and appreciating neurodiversity is a many layered beast and one which needs the appropriate levels of support and investment. In New Zealand, neurodiversity is listed under the banner of disability, meaning, unfortunately, that some companies do not feel the need to engage in neurodiversity at all. Indeed, as part of this research, the author spoke to a number of large construction companies in the country and in one discussion, one of these companies related to me that they had a disability action plan in place, it didn't particularly mention neurodiversity and that they had no intention at present to either create a neurodiversity-specific one, or incorporate neurodiversity into their disability action plan. There are of course, good examples too, but in many instances, the former is still happening. Taking neurodiversity out of disability and into its own prominent brief would support this.

There is no one-size-fits-all approach that can be taken here. This research is a first step at opening the discussion around appreciating and supporting neurodiversity, with the hope that this will lead to not only further pieces of research focused on particular elements within neurodiversity but on actions too. Dyslexia is the most commonly researched, with some pieces of research in the agriculture space only just recently published. This is a promising sign. However, action must follow and be embedded, not just research.

One of, if not the most important element which can be done to support neurodiversity is to speak about it, publicise it, encourage open discussion and understanding. People don't know what they don't know and it is imperative that more education is done in this space to ensure that everyone understands what neurodiversity is. Whilst this research is focused on vocational education and vocational work, we must also reference the fact that a lot of this stems from primary education. Teacher training must include reference to identifying and supporting neurodiversity.

Apart from publicising neurodiversity to normalise it, the most common denominator in all of the support methods is funding, which, especially from a national perspective, when compared to other countries, is lacking. When looking at what is out there at the moment, a great deal already exists within New Zealand, the main barrier to providing this support, is funding. With a skills shortage currently occurring within New Zealand, there is an opportunity for people with neurodiversity who have been misunderstood, and unsupported to fill some of these skills gaps. One method for this to occur is for industry to incorporate funding for their staff to understand neurodiversity, as well as to support skills-gapping and other support for those neurodiverse staff already working to move into jobs which they can do, they just haven't had the support to do. The other is that by having staff trained in understanding neurodiversity, there is less hesitation in hiring neurodiverse staff, as well as ensuring that they are given the right opportunities to thrive, thereby supporting the company to thrive. Government funding, in education, in training and supporting teachers, in helping fund assessment, in creating a separate neurodiversity policy at the governmental level is also an essential piece to reducing the skills gap and providing the right training and support for neurodiverse people to thrive.

There are huge opportunities with a neurodiverse workforce within New Zealand, with none of the issues being insurmountable. The calls to action that are listed are good first steps to



support this. There is a massive amount of resources that already exists and the key now is to maximise these to best support those with neurodiversity to succeed in work and education, and those working with/teaching them.



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