

# Addressing the literacy crisis in Aotearoa New Zealand

Submission for the Productivity Commission inquiry  
'A fair chance for all: Breaking the disadvantage cycle'



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**April 2022**

**Published by**

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ISBN: 978-1-98-856240-7

May 2022



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# Introduction

The purpose of this paper is to inform Te Kōmihana Whai Hua o Aotearoa – the New Zealand Productivity Commission’s inquiry, *A fair chance for all: Breaking the disadvantage cycle*, with a particular focus on breaking the disadvantage cycle for those with literacy needs.<sup>1</sup>

This paper centres mostly on adult learners, as this is in line with the scope of Ako Aotearoa’s work.

Although the main focus will be on literacy, it is important to keep in mind that literacy is not an isolated issue, and that it is interrelated with numeracy and language. It is not just poor literacy that can lead to disadvantage, but low numeracy and language skills can be equally disadvantageous. In adult education we tend to use the term Language, Literacy and Numeracy (LLN) as a more holistic and inclusive term. Therefore, reference to LLN will be made where appropriate.

We will first provide a brief overview of Ako Aotearoa’s work, and will then discuss current adult LLN issues and initiatives to address these. Finally, we will define what needs to happen to break the literacy (or LLN) disadvantage cycle.

## Ako Aotearoa’s role in building educational capability

Ako Aotearoa is the National Centre for Tertiary Teaching Excellence and represents a unique viewpoint and voice for the tertiary education sector.<sup>2</sup> We work alongside our partners and stakeholders in contributing to building educational capability. Our history of research, advocacy and support in tertiary education over many years traverses broad fields of knowledge, sectors and success for priority learner groups.

Ako Aotearoa manages *Te Whatu Kairangi* – the Aotearoa Tertiary Educator Awards.<sup>3</sup> We provide wide-ranging professional learning and development (PLD) programmes on Te Tiriti o Waitangi; Kaupapa Māori; Māori Cultural Capability; Māori learner success; Pacific learner success; technology and online learning; mentoring and assessment; dyslexia; and teaching strategies for phonological awareness, decoding, spelling, reading comprehension, numeracy etc. Ako Aotearoa is the Qualification Developer for most qualifications in the NZQA Teacher Education suite. Our *Knowledge Centre* includes a wealth of resources to support teaching and learning success.<sup>4</sup> We also host and co-host regular strategic forums and events, including *Tuia Te Ako*, *Pacific Tertiary Education Fono*, *Talking Teaching* and the *NZ Vocational Education and Training Research Forum*.

Ako Aotearoa’s *Adult Literacy, Numeracy and Cultural Capability (ALNACC)* team has designed and developed a coherent system to help educators and organisations better support learners in foundation education.<sup>5</sup> This includes specialised PLD and resources on developing LLN and supporting neurodivergent learners, communities of practice, the *New Zealand Dyslexia-Friendly Quality Mark*, and the *Tapatoru Ako Professional Practice Award*.

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<sup>1</sup> <https://www.productivity.govt.nz/inquiries/a-fair-chance-for-all/>

<sup>2</sup> <https://ako.ac.nz/about-us/>

<sup>3</sup> <https://ako.ac.nz/about-us/our-work/te-whatu-kairangi/>

<sup>4</sup> <https://ako.ac.nz/knowledge-centre/>

<sup>5</sup> <https://ako.ac.nz/about-us/alnacc/>

# The current adult LLN landscape in Aotearoa New Zealand

The adult LLN landscape is complex. It is characterised by diversity, not only in terms of the learners and learner needs, but also when it comes to educator backgrounds, providers, and the types of programmes available (Furness, Hedges, & Piercy-Cameron, 2021).

In this section we will paint a picture of the adult LLN landscape in Aotearoa New Zealand. We will highlight the need to 'resist the deficit discourse', outline the reasons for low literacy achievement, discuss how low LLN skills lead to disadvantage, and provide an overview of recent initiatives to address the issue.

## Resisting the deficit discourse

Defining people as being 'low-skilled' is unhelpful and stigmatising. It perpetuates the marginalisation of people and groups in society (Cochrane, Erwin, Lopez, Nisa-Waller, & Percy-Cameron, 2022). While people may have low language, literacy and/or numeracy levels, they have valuable skills they use in the workplace and in their communities (OECD, 2019).

We therefore propose to refrain from categorising people in this way, and to adopt a strengths-based approach instead. Cochrane et al. (2022) have used the term 'high potential' to flip the perspective. Achievement gaps often stem from inequities and inadequacies in the education system, and as such should not be reflected as being inherent in people themselves. People with LLN needs have high potential to benefit from effective support and instruction, and to improve their outcomes in life.

## The reasons for low literacy achievement in Aotearoa New Zealand

There is a variety of reasons why a developed country with a modern economy and a relatively high standard of education is falling short in the literacy education of its citizens. We will describe the current situation, provide some historical background, and identify some of the factors contributing to the literacy crisis.

Literacy difficulties tend to originate in the early years and compound over time without intervention (Pressley, 2014; Vellutino & Fletcher, 2005). Reading difficulties stem from a variety of causes, including cognitive differences, perceptual disorders, and environmental factors such as inadequate language experience, socio-economic disadvantage, and poor reading instruction (Vellutino & Fletcher, 2005, Spear-Swerling & Sternberg, 1996).

Research indicates that early identification and intervention can prevent reading failure (Ministry of Education, 2008; Moats, 2010; Shaywitz, 2003).

Sadly, we've had no national literacy strategy for the past two decades, and no coordinated approach for improving literacy achievement across the education sectors. The predominant approach to reading instruction in our schools, based on a whole language, 'multiple cue' model of reading, is flawed and has failed many New Zealand children, particularly those who struggle with reading. This has meant that, in adult education, we see large numbers of learners who continue to have high literacy needs.

Many organisations lack clear leadership on how to meet the needs of these learners. At the organisational level there is common uncertainty regarding how to assess, diagnose, and monitor learner development using the Literacy and Numeracy for Adults Assessment Tool (LNAAT), or how to meet the TEC funding criteria guidelines (TEC, 2017). There is widespread confusion about the process and actions required to embed literacy and numeracy (i.e., integrate it within a vocational area) at the programme and delivery level. There is little awareness of the ability to collect, analyse and act on assessment data to inform teaching.

Vocational educators working with learners generally have little teacher training, and even less training in how to teach literacy and numeracy. Typically, educators are industry experts, with little awareness of the literacy and numeracy demands required for their own vocations. In some cases, they lack the

essential LLN skills themselves. Educators constantly report that they are not equipped to meet the needs of learners with LLN needs, and express frustration at the high rates of learner difficulty and dropout. We should note that these educators develop these skills quickly when engaged in professional development. This is not a criticism of educators, but to point out that content experts also require pedagogical and LLN training when working with adult learners.

Also, organisations and educators are seeking support to develop their cultural competency to better engage and support Māori and Pacific learners. The TEC prioritised both Māori and Pacific Peoples due to inequitable educational outcomes that led to a range of social, economic and health disparities. The Covid-19 crisis is exacerbating this inequity, yet the initiatives to address this have been too limited in scope, leading to minimal progress and leaving many parts of the sector ill-equipped to meet the challenge.

The 2016 Programme for the International Assessment of Adult Competencies (PIAAC) survey results provided an overview of current New Zealand adults' literacy and numeracy levels. Results indicated that 11.8% of adults attained only Level 1 or below in literacy proficiency and 18.9% attained only Level 1 or below in numeracy. It was also found that there is a large, persistent gap between the total population and Māori, Pacific, and youth (Ministry of Education, 2017a; Ministry of Education, 2017b; Ministry of Business, Innovation and Employment, 2016). Similar literacy achievement gaps between ethnic groups have been detected among children (Hood & Hughes, 2022a).

Results from previous surveys for New Zealand children also indicated a distinct literacy achievement gap between good and poor readers. Evidence from the 2001 Progress in International Reading Literacy Study (PIRLS) pointed to a wide spread of scores, indicating "high levels of disparity between good and poor readers" (Tunmer, Chapman, & Prochnow, 2004, p. 127). Five years later, in the subsequent 2006 PIRLS survey, this literacy achievement gap had not narrowed (Tunmer, Nicholson, Greaney, Prochnow, Chapman, & Arrow, 2008).

A few years ago, Tunmer, Chapman, Greaney, Nicholson and colleagues conducted a relentless campaign to advocate the reform of the literacy approach used in our education system. They presented a well-documented explanation for New Zealand's low literacy performance and the associated inequity in literacy outcomes (Chapman, 2001; Chapman, Tunmer, & Prochnow, 2001; Chapman, Tunmer, & Allen, 2003; Tunmer, Chapman, & Prochnow, 2004; Tunmer & Chapman, 2007; Tunmer, Nicholson, Greaney, Prochnow, Chapman, & Arrow, 2008; Tunmer & Greaney, 2008; Tunmer & Greaney, 2010). Their explanation focused on the fact that dyslexia was not recognised by the New Zealand government until 2007; the persistent adherence to the whole language approach in New Zealand primary schools; the reliance on Reading Recovery as a programme of early intervention and remediation; and large individual differences in early literacy exposure or 'literate cultural capital' and our failure to adequately address this disparity.

Now, more than two decades after the PIRLS results in 2001, we still haven't managed to close the achievement gap and urgent action is needed. A recent UNICEF report (2020) indicated declining proficiency in reading and maths, and very poor rankings in terms of child wellbeing outcomes, compared to other OECD countries.

In recent years, Ako Aotearoa's ALNACC team has repeatedly called for action:

- In 2020 we contributed to an open letter to the TEC to raise our concerns about the long-term impacts of lower levels of LLN on social and economic outcomes, and the need for a strategy to address the situation.
- In the same year we prepared recommendations for LLN to be an integral part of the new Tertiary Education Strategy.<sup>6</sup>
- In 2021 we held a workshop for TEC and other sector stakeholders to discuss the need for developing educator capability in foundation-level teaching and learning.<sup>7</sup>

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<sup>6</sup> <https://assets.education.govt.nz/public/Documents/NELP-TEs-documents/FULL-TEs-2020.pdf>

- Also in 2021, we provided extensive feedback to the TEC about the need for a new LLN implementation strategy.
- We developed a Context Review on building capability in the foundation education sector, to provide an overview of national and international literature, policy documentation, and research findings.<sup>8</sup>
- We hosted a sector stakeholder meeting in November 2021 to discuss pathways to capability building.<sup>9</sup>
- We recently submitted a White Paper to the Minister of Education’s Office to express our concerns that the current policy settings do not allow for the TEC and Ako Aotearoa to meet current sector need in building the capability of organisations and educators to provide quality, culturally responsive LLN support to learners. In this paper we highlighted the increasing challenges in meeting the LLN needs of adult learners, and the growing inequity of identified TEC priority groups, including Māori, Pacific Peoples, and disabled learners, and outlined recommendations to develop the capability of the tertiary foundation sector to respond to the LLN needs of learners, and develop the cultural competencies needed to support Māori and Pacific learners.

## How do low LLN skills lead to people being trapped in persistent disadvantage?

The disadvantage faced by people with LLN needs is well documented. Low LLN skills have far-reaching, and often lifelong, impacts on a person’s social and economic wellbeing, often extending across generations (Bynner & Parsons, 2006; Hood & Hughson, 2022b; Grotlüschen, Mallows, Reder, & Sabatini, 2016; Morrisroe, 2014; Reder, 2022; Windisch, 2015). This includes outcomes related to education, employment, health, social inclusion, social trust, political efficacy and civic engagement (Morrisroe, 2014; Reder, 2022).

Stanovich (1986) coined the term ‘Matthew Effect’ to describe the persistent nature of reading difficulties if no adequate intervention is provided, and the consequent widening of the gap between proficient and poor readers. The term is taken from a biblical statement in Matthew, Chapter 25, Verse 29: “To all those who have, more will be given, and they will have an abundance; but from those who have nothing, even what they have will be taken away.”

If struggling readers are not supported well, and don’t accumulate a good measure of ‘reading mileage’, which is needed for them to improve their reading proficiency, they may lose interest in reading. As a result, their exposure to reading is even more reduced. Stanovich (1986) referred to this chain of events as “the rich get richer and the poor get poorer” (p. 382). If adult learners have experienced reading difficulties from an early age, educators will need to address their specific areas of need in order to reverse this downward spiral.

This helps to illustrate how low LLN skills can lead to people being trapped in persistent disadvantage.

In the workplace, the constant demand for higher skills across industries, fuelled by advances in technology, poses significant challenges for people with LLN needs. A recent OECD (2021a) report discussed the notion of minimal skills, concluding that analytical skills, problem-solving skills, and digital skills are not merely desired, but essential in the post-Covid-19 environment. As the need for essential LLN skills for employees increases, the tertiary education system struggles to uphold previous levels.

Adults entering the workforce require not only the vocational skills to gain employment, but also a set of independent learning skills, including LLN and learner agency skills, that will enable them to continue to learn over their life course. Recent OECD (2021a) research finds that adults who are unable to engage in lifelong learning are now highly likely to suffer social and economic marginalisation. The

<sup>7</sup> For a recording of this workshop, see <https://www.youtube.com/watch?v=iCA-Jm5egrw>

<sup>8</sup> [https://ako.ac.nz/assets/Uploads/Context-Review-Building-capability-in-foundation-sector\\_final.pdf](https://ako.ac.nz/assets/Uploads/Context-Review-Building-capability-in-foundation-sector_final.pdf)

<sup>9</sup> For the discussion paper, see [https://ako.ac.nz/assets/ALNACC/211020-Pathways-to-capability-building-in-foundation-education\\_Discussion-paper.pdf](https://ako.ac.nz/assets/ALNACC/211020-Pathways-to-capability-building-in-foundation-education_Discussion-paper.pdf)

OECD (2020) recommends prioritising ‘skills for the future’ (learner agency, self-management skills, autonomy) because learners with LLN needs are often unable to adequately learn online in the absence of face-to-face teaching. One local example of this growing concern is the negative impact the Covid lockdowns have had on the attendance and performance of Māori and Pacific learners (Ministry of Education, 2020). The OECD (2021b) warns that, when learners who are already disadvantaged enter tertiary training after two years of disrupted education, the educational disparities are likely to be even greater.

Another challenge is that the number of adults with low levels of LLN skills entering tertiary education and training appears to be increasing. High proportions of foundation-level learners have low levels of literacy and numeracy. This is causing them to fail to complete programmes, transition into further training, and gain or maintain employment. Hard data and anecdotal feedback from industries and training providers reveal that this problem is growing and undermining the training pipeline. Recent PIAAC data, (Ministry of Education, 2017a), TIMSS (NZMaths, 2020) and PISA data (Ministry of Education, 2021) suggest an upsurge in the trend in the coming years. It is also suggested that, due to Covid-19-related issues, there will be a rise in the number of young people entering foundation-level training who will have missed a significant amount of their schooling over the previous two years. A potential tsunami of young people with high LLN needs will enter tertiary training in the coming years.

## Initiatives to address the issue

In the 2006 Adult Literacy and Life Skills (ALL) survey it was found that “1.1 million New Zealanders (43% of adults aged 16 to 65) had literacy or numeracy skills below the level deemed necessary to understand and use information contained in the texts and tasks that characterise our emerging knowledge society and information economy” (Tertiary Education Commission, 2012, p. 6). This was a wake-up call that prompted the government to invest largely in funding workplace, embedded and intensive literacy and numeracy programmes, and in developing a LLN and cultural capability infrastructure. This infrastructure has been extended over time, as outlined in the table below.

|             |   |
|-------------|---|
| 2007        | <b>Educator qualifications</b> in adult literacy and numeracy education (previously the National Certificate in Adult Literacy Education (NCALE), now the New Zealand Certificate in Adult Literacy and Numeracy Education (NZCALNE). |
| 2008        | The development of the <b>Learning Progressions</b> for Adult Literacy and the Learning Progressions for Numeracy. <sup>10, 11</sup>  |
| <b>2009</b> | The establishment of the <b>National Centre of Literacy and Numeracy for Adults</b> (NCLANA; disestablished in 2017).   |
| <b>2010</b> | The development of the Literacy and Numeracy for Adults <b>Assessment Tool</b> (LNAAT). <sup>12</sup>   |
| 2010        | The requirement to <b>embed literacy and numeracy</b> into vocational programmes (TEC, 2010). <sup>13</sup>   |
| 2011        | The development of <b>Pathways Awarua</b> , an online interactive learning tool with learner pathways and educator pathways. <sup>14</sup>  |
| 2016        | <b>He Taunga Waka</b> , professional development in Māori and Pacific cultural capability, delivered by Ako Aotearoa. <sup>15</sup>   |
| 2017        | <b>The Māori Cultural Capability Pathway</b> . <sup>16</sup>  |
| 2017        | <b>The Pacific Cultural Centredness Pathway</b> . <sup>17</sup>   |

<sup>10</sup> <https://ako.ac.nz/knowledge-centre/learning-progressions-for-adult-literacy/>

<sup>11</sup> <https://ako.ac.nz/knowledge-centre/learning-progressions-for-adult-numeracy/>

<sup>12</sup> <https://assess.literacyandnumeracyforadults.com/>

<sup>13</sup> <https://www.tec.govt.nz/assets/Forms-templates-and-guides/adb712b0a3/Embedded-literacy-numeracy-practices.doc>

<sup>14</sup> <https://pathwaysawarua.com/>

<sup>15</sup> <https://ako.ac.nz/knowledge-centre/he-taunga-waka/>

|      |   |
|------|---|
| 2018 | The ' <b>Capability Building Model</b> ', a new model for building cultural capability and educational capability in literacy and numeracy. <sup>18</sup> |
| 2018 | The <b>Adult Literacy and Numeracy Effective Practice Model</b> . <sup>19</sup>   |
| 2018 | <b>Adult Literacy and Numeracy Practices</b> tools and report. <sup>20,21,22</sup>  |
| 2018 | <b>Professional learning and development</b> opportunities through the Adult Literacy, Numeracy and Cultural Capability programme. <sup>23</sup>          |
| 2019 | <b>Learner Agency</b> resources and thinkpiece. <sup>24</sup>   |
| 2021 | The <b>New Zealand Dyslexia-Friendly Quality Mark</b> . <sup>25</sup>   |
| 2022 | The <b>Tapatoru Ako Professional Practice Award</b> , a model for whole-organisation capability building, based on reflective practice. <sup>26</sup>     |

Thanks to this investment, we now have a world-class LLN infrastructure, but continued investment is needed, more than ever.

## Improving learner outcomes: What needs to happen?

Effective national policy settings are needed to address the literacy (or broader LLN) crisis, break the cycle of disadvantage, and remove barriers to social and economic wellbeing.

Policy needs to facilitate effective and inclusive lifelong learning (OECD, 2021), remove participation barriers, and facilitate resourcing (Windisch, 2015). It is vital for the learner voice to be included when developing this policy, as their perspectives on the barriers and enablers will help set policy that is fit-for-purpose.

We propose for policy to be centred on the following measures:

- An adult LLN Implementation Strategy
- Evidence-based teaching approaches
- LLN support through Response-to Intervention
- Teacher training and professional development
- Culturally responsive pedagogies
- Inclusive teaching and learning environments
- Research
- Resourcing.

We will discuss each of these in more detail.

### 1. Adult LLN Implementation Strategy

The government has committed to the United Nations' Sustainable Development Goals (SDG). As such we have an obligation to work towards the achievement of these goals. A dedicated strategy would help map out our strategic planning for this.

<sup>16</sup> <https://ako.ac.nz/knowledge-centre/maori-learner-success/maori-cultural-capability-pathway/>

<sup>17</sup> <https://ako.ac.nz/knowledge-centre/pasifika-learner-success/pacific-cultural-centredness-pathway/>

<sup>18</sup> <https://ako.ac.nz/about-us/alnacc/the-capability-building-model/>

<sup>19</sup> <https://ako.ac.nz/about-us/alnacc/the-draft-aln-effective-practice-model/>

<sup>20</sup> <https://ako.ac.nz/assets/ALNACC/REPORT-Enhancing-and-measuring-adult-literacy-and-numeracy-progress.pdf>

<sup>21</sup> <https://ako.ac.nz/assets/ALNACC/TOOL-Practices-checklist-and-interview-tool.pdf>

<sup>22</sup> <https://ako.ac.nz/assets/ALNACC/TOOL-Practices-Self-report-Tool.pdf>

<sup>23</sup> <https://ako.ac.nz/professional-learning/in-house-workshop/>

<sup>24</sup> <https://ako.ac.nz/assets/News-and-Success-stories/Learner-agency-in-adult-foundation-level-education.pdf>

<sup>25</sup> <https://ako.ac.nz/our-community/the-dyslexia-friendly-quality-mark/>

<sup>26</sup> <https://ako.ac.nz/about-us/alnacc/tapatoru-ako-professional-practice-award/>

UN Sustainable Development Goal 4:

*Ensure inclusive and quality education for all and promote lifelong learning.*

Specifically, SDG4 target 4.6 relates to literacy and numeracy:

*By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.*

Although ambitious, this is not an unachievable goal, provided we take urgent, strategic action.

A new TEC LLN strategy would reinvigorate and provide guidance to the sector, placing the emphasis on effective practices that lead to positive outcomes for all tertiary learners. If we are to make a difference for our most vulnerable learners, we need a clear focus on LLN, values-based teaching, and building capability in LLN education. This can only be achieved through a dedicated LLN strategy. LLN targets and workstreams need to be visible and clearly articulated.

Previous TEC literacy and numeracy strategies (e.g., TEC, 2015) worked successfully over the past two decades to develop sector capability and improve quality systems. These strategies were supported by a substantial financial investment and have resulted in the development of significant educational assets and our LLN and cultural capability infrastructure. These initiatives were supported by Ministry of Education policy and clear messaging by a dedicated team of TEC Literacy and Numeracy Advisors.

The last TEC's Literacy and Numeracy Implementation Strategy expired in 2019. Due to a restructure, TEC no longer has a team of Literacy and Numeracy Advisors. As a result, a void has been created and a lack of strategic direction, at a time of change when the education and training sector needs clear signals to support the success of a diverse learner group.

Calls have been made for a national literacy strategy for schools (Hood & Hughson, 2022b). We recommend a system-wide, coordinated approach, with parallel LLN strategies for schools, kura and tertiary education.

## **2. Evidence-based teaching approaches**

A wealth of research evidence demonstrates that effective literacy instruction balances explicit, systematic skills instruction (phonological awareness; letter-sound relationships; reading comprehension, vocabulary, spelling and writing strategies) with authentic literacy experiences (for example: Beder & Medina, 2001; Durgunoğlu & Öney, 2002; NICHD, 2000; Mellard, Becker Patterson & Prewett, 2007; McHardy & Chapman, 2016; Moats, 2010; Nicholson, 1997; Nicholson, 2005; Nicholson, 2007; Pressley, 2014; Purcell-Gates et al., 2002; Rayner, Foorman, Perfetti, & Seidenberg, 2001; Sheehan-Holt & Smith, 2000; Snow & Juel, 2005; van Lamoen, 2013; Vorhaus, Litster, Frearson & Johnson, 2011). This is the case not just for children, but for adults too.

Engagement in literacy practices is as important as skill instruction. As mentioned previously, learners need reading mileage to enhance their reading skills (Dymock & Nicholson, 2012; Rice & Brooks, 2004; Spear-Swerling & Sternberg, 1996; Wolf, 2007). Literacy proficiency and literacy engagement reciprocally influence each other (Reder, 2022; Whitten, 2018).

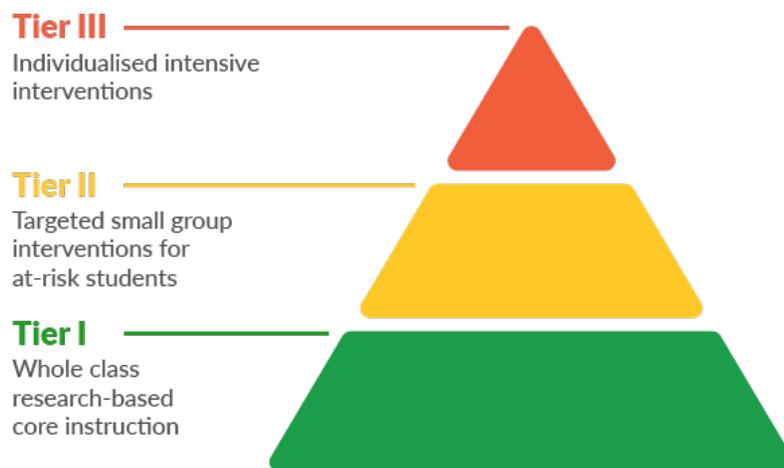
Effective adult LLN programmes and interventions, in the classroom and the workplace, not only improve learners' LLN skills, but they change people's lives and improve their social and economic wellbeing.

It is, therefore, crucial that evidence-based, research-informed teaching approaches are at the centre of these programmes, and are promoted and supported through policy and professional development.

### 3. LLN support through Response-to Intervention

A systemic, coordinated approach to supporting learners with LLN needs is needed, across early childhood, primary, secondary and tertiary education.

The Response to Intervention (RTI) model is a three-tiered, whole-organisation approach to ensure the right level of support for all learners with learning needs (Hood & Hughson, 2022a; Hood & Hughson, 2022b; Tunmer & Greaney, 2008; Fuchs & Fuchs, 2006).



(Image: <https://www.stkildaps.vic.edu.au/curriculum/assessment/>)

**Tier 1:** Enhanced classroom instruction, based on evidence-based teaching and learning approaches

**Tier 2:** More explicit and extended small-group instruction for at-risk learners

**Tier 3:** Intensive individualised intervention for learners who do not respond to small-group instruction

If the learner does not respond to Tier 1 instruction, they can access Tier 2 support. Learners can move up or down tiers as needed. Assessment results will guide this process.

RTI ensures early identification, evidence-based instruction targeted to individual needs, and using assessment results to monitor progress and inform instruction.

### 4. Teacher training and professional development

The challenges for adults with LLN needs outlined above can be largely addressed by developing the capability of tertiary educators.

The world of work is changing rapidly, due to technological, economic, environmental and demographic developments. This has caused a transformation in skills needs, which has been accelerated by the Covid-19 pandemic. To navigate this fluctuating environment, learners need to be lifelong and agentic learners with *transversal skills* that are in increasing demand in the labour market (OECD, 2021a). These are skills that are needed to adapt to change, such as communication, teamwork, problem-solving, leadership, critical thinking, organisation, resilience, digital literacy and adaptability.

The Tertiary Education Strategy<sup>27</sup> (TES) sets out the objectives for supporting learner success, achieving equitable outcomes, and responding to this transformation in skills needs.

The most important factor in learner success is having quality educators.<sup>28</sup> Capable and qualified educators improve learner outcomes (Benseman, 2013; Casey, Cara, Eldred, Grief, Hodge, Ivani, Jupp, Lopez, & McNeil, 2006; Vorhaus et al., 2011).

<sup>27</sup> <https://www.education.govt.nz/our-work/overall-strategies-and-policies/the-statement-of-national-education-and-learning-priorities-nelp-and-the-tertiary-education-strategy-tes/#about-nelp-tes>

Educators will have to prepare their learners for the changing world of work; create learner-centred teaching and learning environments focused on learner wellbeing, equity and inclusion; and build the LLN skills that are key to developing their learners' transversal and vocational skills.

Educators themselves need to be lifelong learners to meet this challenge. They need to be engaged in continuous professional learning and development and provided with flexible options that are aligned with the range of roles and contexts in tertiary education. This will build the best possible foundation for learner success.

Currently, educators are not adequately supported to meet the challenge presented by adults with LLN support needs and the higher learning demands of the workplace.

In schools, a similar picture emerges, with some teachers inadequately prepared for teaching and assessing literacy effectively (Hood & Hughson, 2022b).

In adult education, educator contexts are marked by diversity. Educators operate in a wide variety of roles and contexts, including vocational education, intensive literacy and numeracy, ESOL, workplace LLN, programme management, industry training, community-based education, learning support, pastoral care, and instructional design.

The standard qualification for educators in foundation education has traditionally been the New Zealand Certificate in Adult Literacy and Numeracy Education (NZCALNE). Until recently this was the minimum requirement set by TEC for these educators. However, qualification enrolments and completions are low, and insufficient to build wider sector capability. Also, feedback from the sector shows that this one-size-fits-all approach is ill-suited to the capability building needs of the sector. This is why more flexible options have been developed, so that educators can design the capability building pathway that aligns with their role and their practice.

## **5. Culturally responsive pedagogies**

The disadvantage experienced by Māori and Pacific Peoples needs to be addressed through policy interventions and more targeted investment (Cochrane et al., 2022).

Creating inclusive teaching and learning environments goes hand-in-hand with building the cultural capability of educators. If we are to open learners' hearts and minds to learning, and fully engage them in the learning process, our teaching needs to be relevant to their lives, in a culturally inclusive and responsive way. Learners need to feel safe, comfortable, and valued. This is why professional development is needed in culturally responsive pedagogies, Māori and Pacific Peoples' world views, knowledge bases, and values.

Particularly with Māori and Pacific learners, a holistic, values-based approach to teaching and learning has been found to be most effective, in ways that acknowledge and include learners' values and ways of thinking, and encourage them to be active participants in the learning process (Bishop, 2012; Chu, Samala Abella, & Paruini, 2013; Chu & Ikiua-Pasi, 2021; Kerehoma, Alkema, Murray, & Ripley, 2019; Luafutu-Simpson, Noa, Uta'i, & Petelo, 2018; Potter, Taupo, Hutchings, & McDowall, 2011; Sciascia, 2017).

## **6. Inclusive teaching and learning environments**

Learners in adult education have diverse needs, including learning difficulties, LLN needs, neurodiversity, and social, emotional and cultural needs. Teaching diverse learners can be a challenging task, and educators need adequate support to equip them with the knowledge and skills they need.

In a study on adult dyslexia in Aotearoa New Zealand it was found that the needs of adult learners with dyslexia are typically not met, and that adult literacy educators are not adequately prepared for, or feel confident in, teaching and supporting learners with dyslexia (van Lamoen, 2013). Previous research indicated similar findings (Benseman, Sutton & Lander, 2005; Dymock & Nicholson, 2012; Leach, Zepke & Haworth; 2010).

For example, educators need to be trained in multi-sensory approaches to teaching literacy, which have been proven to be most successful for learners with dyslexia (Birsh, 2011; Kelly & Phillips, 2011; Oakland, Black, Stanford, Nussbaum, & Balise, 1998; Shaywitz, 2003).

There is abundant evidence to demonstrate that learners with dyslexia are traditionally underserved by the education system. They have often experienced failure at school and have encountered misunderstanding of their difficulties by teachers and peers (Dale & Taylor, 2001; Dymock & Nicholson, 2012; Frank & Livingston, 2002; Price & Gerber, 2008; Wolf, 2007). In interview studies, many dyslexic adults recount having been bullied and humiliated (Dale & Taylor, 2001; Edwards, 1994; Fink, 1998; Glazzard, 2010; Gunnel Ingesson, 2007; McNulty, 2003; Price & Gerber, 2008; Tanner, 2009a; Tanner, 2009b; Tanner, 2010). Tanner (2009a) conducted focus group discussions and interviews with 70 adults with dyslexia. She found that “physical and emotional bullying within and outside the classroom emerged as a common theme” (Tanner, 2009a, p. 793). Participants reported being hit by teachers, being called mentally retarded by peers, and being publicly humiliated in front of the class. These experiences can lead to a lack of confidence, low academic self-concept, anxiety, feelings of isolation and frustration, learned helplessness, a disinterest in learning, and even behavioural problems (Bell, 2010; Burden 2005; Burden, 2008; Coffield et al., 2008; Edwards, 1994; Humphrey & Mullins, 2002; Kerr, 2001; McNulty, 2003; Ministry of Education, 2008).

For these learners building confidence, self-esteem and motivation is a pivotal part of the learning process and educators can be instrumental in promoting this.

In an attempt to address the situation, we developed the New Zealand Dyslexia-Friendly Quality Mark at Ako Aotearoa. This programme is helping Tertiary Education Organisations to create safe and inclusive teaching and learning environments for learners with dyslexia.

Dyslexia is just one example. It goes without saying that the needs of all learners need to be met, including neurodiverse and disabled learners. At Ako Aotearoa we facilitate a Neurodiversity Community of Practice, where we share news, resources, research, and presentations with our members on topics related to ADHD, autism, dyslexia, dyspraxia, dyscalculia etc. It has become clear that there is a huge need for support and upskilling in the sector, which has prompted us to develop a resource on Universal Design for Learning (UDL), which is currently under development. Training in UDL will assist educators and organisations to create inclusive environments and meet the diverse needs of learners.

## **7. Research**

Research is at the heart of continuous improvement in education. Educators need to be trained in research-informed teaching approaches. Quality professional development helps to bridge the gap between theory and practice. It helps educators to unpack and understand research findings, so that they can apply them in their practice. It also helps them to become reflective practitioners. Where possible, educators should be encouraged to engage in research themselves.

Policy needs to include a clear focus on research, including monitoring our progress towards policy objectives.

## **8. Resourcing**

Sadly, the investment in professional development in adult literacy and numeracy education has been considerably downscaled over recent years, from \$3.5 million p.a. in 2009, when the National Centre of Literacy and Numeracy for Adults was established, to a mere \$1.15 million p.a. currently. Given the urgent need for upskilling the sector, adequate funding needs to be in place.

Similarly, adequate resourcing is needed for quality LLN support for those who need it. Funding needs to align with learner-centred outcome measures to ensure it is relevant, appropriate and effective (Furness, Hedges, & Piercy-Cameron, 2021).

A worrying trend we have observed in recent years is for funding to be channelled mainly towards creating learning opportunities, increasing learning places and participation in learning. However, this investment is futile if these learners do not receive quality teaching, and will further disadvantage learners who are already struggling. Investment in learning opportunities needs to be coupled with funding for building educator capability in providing LLN support.

## Conclusion

We are experiencing not just a literacy crisis, but a language, literacy, and numeracy crisis. National policy can help address this crisis. In this paper we have outlined eight measures which need to be included in this policy. Including the learner voice in defining policy measures can help create policy that is inclusive and learner-centred.

People who have LLN needs are vulnerable. They are at risk of being left behind and marginalised. They are more likely to be unemployed or in low-pay employment, and to have lower levels of health, civic participation and social inclusion. Low levels of LLN are associated with poverty, mental health, crime and addiction (Morrisroe, 2014).

We have an obligation to break the disadvantage cycle for these people and the current inquiry affords an opportunity to do so. Policy levers and resourcing can be put in place to make meaningful change, for people of all ages.

For adults, quality LLN programmes and support can help reverse the downward spiral. Apart from the skill acquisition, they can help build the self-esteem, confidence, and motivation needed to improve people's social and economic outcomes.

The primary factor in learner success is having capable educators. Improved teacher/educator education should be introduced across all sectors, both pre-service and in-service: in early childhood, primary, secondary, and tertiary education.

If we can catch our learners before they fall, there will be much less need for the ambulance at the bottom of the cliff.

## References

- Beder, H., & Medina, P. (2001). *Classroom dynamics in adult literacy education*. Cambridge, MA: National Centre for the Study of Adult Learning and Literacy.
- Bell, S. (2010). Inclusion for adults with dyslexia: Examining the transition periods of a group of adults in England: 'Clever is when you come to a brick wall and you have to get over it without a ladder.' *Journal of Research in Special Educational Needs*, 10 (3), 216–226. doi: 10.1111/j.1471-3802.2010.01167.x
- Benseman, J., Sutton, A., & Lander, J. (2005). *Pedagogy in practice: An observational study of literacy, numeracy and language teachers*. Auckland, New Zealand: Auckland UniServices.
- Benseman, J. (2013). *Research-informed teaching of adults: a worthy alternative to old habits and hearsay?* Unitec ePress Occasional and Discussion Paper Series. 2013/2:23. Auckland: Unitec Press.
- Birsh, J.R. (Ed.). (2011). *Multisensory teaching of basic language skills (3rd ed.)*. Baltimore, MD: Paul. H. Brookes.
- Bishop, R. (2012). Pretty difficult: Implementing kaupapa Māori theory in English-medium secondary schools. *New Zealand Journal of Educational Studies*, 47(2), 38–50.
- Burden, R. (2005). *Dyslexia and self-concept: Seeing a dyslexic identity*. London, England: Whurr.
- Burden, R. (2008). Is dyslexia necessarily associated with negative feelings of self-worth? A review and implications for future research. *Dyslexia*, 14(3), 188–196. doi: 10.1002/dys.371
- Bynner, J., & Parsons, S. (2006). *New light on literacy and numeracy: Results of the literacy and numeracy assessment in the age 34 follow-up of the 1970 British 31 | Page Cohort Study (BCS70)*. London, United Kingdom: National Research and Development Centre for Adult Literacy and Numeracy.
- Casey, H., Cara, O., Eldred, J., Grief, S., Hodge, R., Ivani, R., Jupp, T., Lopez, D., & McNeil, B. (2006). "You wouldn't expect a maths teacher to teach plastering...": *Embedding literacy, language and numeracy in post-16 vocational programmes – the impact on learning and achievement*. National Research and Development Centre: London.
- Chapman, J.W. (2001). Learning disabilities in New Zealand: Where kiwis and kids with LD can't fly. *Journal of Reading Disabilities*, 25(6), 362–370. Retrieved from Ebscohost educational database.
- Chapman, J.W., Tunmer, W.E., & Prochnow, J. E. (2001). Does success in the Reading Recovery program depend on developing proficiency in phonological processing skills? *Scientific Studies of Reading*, 5(2), 141–176. doi:10.1207/S1532799Xssr0502\_2
- Chapman, J.W., Tunmer, W.E., & Allen, R. (2003). Findings from the International Adult Literacy Survey on the incidence and correlates of learning disabilities in New Zealand: Is something rotten in the state of New Zealand? *Dyslexia*, 9(2), 75–98. Retrieved from ProQuest Education Journals database.
- Cochrane, B., Erwin, C., López, N., Nisa-Waller, A. & Percy-Cameron, G. (2022). *Identifying adult populations with high potential for literacy and numeracy skill acquisition: an intersectional approach*. NZ Work Research Institute. Auckland, NZ.
- Coffield, M., Riddick, B., Barmby, P., & O'Neill, J. (2008). Dyslexia friendly primary schools: What can we learn from asking the pupils? In G. Reid, A. Fawcett, F. Manis, & L. Siegel (Eds.), *The SAGE handbook of dyslexia* (pp. 356–368). London, England: SAGE.
- Chu, C., Samala Abella, I., & Paruini, S. (2013). *Educational practices that benefit Pacific learners in tertiary education*. Wellington: Ako Aotearoa.
- Chu, C., & Ikiua-Pasi, J. (2021). *From good to great: The 10 habits of phenomenal educators for Pacific learners in New Zealand tertiary education*. Wellington: Ako Aotearoa.
- Dale, M., & Taylor, B. (2004). How adult learners make sense of their dyslexia. *Disability and Society*, 16(7), 997–1008. doi: 10.1080/09687590120097872
- Durgunoğlu, A.Y., & Öney, B. (2002). Phonological awareness in literacy acquisition: It's not only for children. *Scientific Studies of Reading*, 6(3), 245–266. Retrieved from <http://search.ebscohost.com.ezproxy.waikato.ac.nz/login.aspx?direct=true&db=aph&jid=7MY&site=ehost-live>
- Dymock, S., & Nicholson, T. (2012). *Dyslexia decoded: What it is, what it isn't and what you can do about it*. Hamilton, New Zealand: National Centre of Literacy and Numeracy for Adults.
- Fink, R.P. (1998). Literacy development in successful men and women with dyslexia. *Annals of Dyslexia*, 48(1), 311–346. Retrieved from ProQuest Education Journals database.

- Frank, R., & Livingston, K. (2002). *The secret life of the dyslexic child*. Princeton, NJ: Philip Lief Group.
- Fuchs, D. & Fuchs, L.S. (2006). Introduction to Response to Intervention: What, why, and how valid is it? *Reading and Writing*, 18, 129–155.
- Furness, J., Hedges, M., Piercy-Cameron, G. (2021). *Adult literacy and numeracy intervention landscape in Aotearoa New Zealand*. NZ Work Research Institute. Auckland, NZ.
- Glazzard, J. (2010). The impact of dyslexia on pupils' self-esteem. *British Journal of Learning Support*, 25(2), 63–69. doi 10.1111/j.1467-9604.2010.01442.x
- Grotlüschen, A. et al. (2016). *Adults with Low Proficiency in Literacy or Numeracy*, OECD Education Working Papers, No. 131. OECD Publishing, Paris. <http://dx.doi.org/10.1787/5jm0v44bnmxx-en>
- Gunnel Ingesson, S. (2007). Growing up with dyslexia: Interviews with teenagers and young adults. *School Psychology International*, 28(5), 574–591. doi: 10.1177/0143034307085659
- Hood, N. & Hughson, T. (2022a). *Now I don't know my ABC: the perilous state of literacy in Aotearoa New Zealand*. The Education Hub. Retrieved from <https://theeducationhub.org.nz/now-i-dont-know-my-abc/>
- Hood, N. & Hughson, T. (2022b). *What's happening with literacy in Aotearoa New Zealand?* The Education Hub. Retrieved from [https://theeducationhub.org.nz/wp-content/uploads/2022/03/Ed-Hub-Long-literacy-report\\_v2.pdf](https://theeducationhub.org.nz/wp-content/uploads/2022/03/Ed-Hub-Long-literacy-report_v2.pdf)
- Humphrey, N., & Mullins, P.M. (2002). Self-concept and self-esteem in developmental dyslexia. *Journal of Research in Special Educational Needs*, 2(2), doi: 10.1111/j.1471-3802.2002.00163.x
- Kelly, K., & Phillips, S. (2011). *Teaching literacy to learners with dyslexia: A multisensory approach*. London, England: SAGE.
- Kerehoma, C., Alkema, A., Murray, N., & Ripley, I. (2019). *Hīnātore: Empowering Māori and Pacific people through workplace learning*. Wellington: Ako Aotearoa.
- Kerr, H. (2001). Learned helplessness and dyslexia: a carts and horses issue? *Journal of Research in Reading*, 35(2), 82–85. doi: 10.1111/1467-9345.00166
- Leach, L., Zepke, N., & Haworth, P. (2010). *'One size does not fit all': How five tertiary education organisations embed literacy, language and numeracy*. Wellington, New Zealand: Ministry of Education.
- Luafutu-Simpson, P., Noa, A., Uta'i, S., & Petelo, L. (2018). *Pasifika success indicators (PSI) tool: Learning designs and teaching strategies, supporting staff, Pacific learner success, supporting learners*. Wellington: Ako Aotearoa.
- McHardy, J., & Chapman, E. (2016). How less skilled adult readers can be taught to read. *Literacy and Numeracy Studies 2016*, 24(2), pp. 24–42.
- McNulty, M.A. (2003). Dyslexia and the life course. *Journal of Learning Disabilities*, 36(4), 363–381. doi: 10.1177/00222194030360040701
- Mellard, D., Becker Patterson, M., & Prewett, S. (2007). Reading Practices among adult education participants. *Reading Research Quarterly*, 42(2), 188–213. Retrieved from ProQuest Education Journals database.
- Ministry of Business, Innovation and Employment. (2016). *Skills and Education: Survey of Adult Skills*. Wellington, New Zealand: Author.
- Ministry of Education. (2008). *About dyslexia*. Wellington, New Zealand: Author.
- Ministry of Education. (2017a). *Youth skills: Survey of adult skills (PIAAC)*. Wellington, New Zealand: Ministry of Education.
- Ministry of Education. (2017b). *Māori adults' literacy, numeracy and problem solving skills: Survey of adult skills (PIAAC)*. Wellington, New Zealand: Ministry of Education.
- Ministry of Education. (2020). *He Whakaaro: How COVID-19 is affecting school attendance*. Education Counts. Author. [https://www.educationcounts.govt.nz/\\_data/assets/pdf\\_file/0013/204610/How-COVID-19-is-affecting-school-attendance.pdf](https://www.educationcounts.govt.nz/_data/assets/pdf_file/0013/204610/How-COVID-19-is-affecting-school-attendance.pdf)
- Ministry of Education. (2021). *Education Indicator*. <https://www.educationcounts.govt.nz/publications/series/PISA/pisa-2018/mathematics-literacy-achievement-senior-secondary-schooling>
- Morrisroe, J. (2014). *Literacy Changes Lives: A new perspective on health, employment and crime*. London: National Literacy Trust. Retrieved from [https://cdn.literacytrust.org.uk/media/documents/2014\\_09\\_01\\_free\\_research\\_-\\_literacy\\_changes\\_lives\\_2014.pdf\\_RJZEXmT.pdf](https://cdn.literacytrust.org.uk/media/documents/2014_09_01_free_research_-_literacy_changes_lives_2014.pdf_RJZEXmT.pdf)

- Moats, L.C. (2010). *Speech to print: Language essentials for teachers*. Baltimore, MD: Paul H. Brookes.
- National Institute of Child Health and Human Development. (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*. Washington, DC: US Government Printing Office.
- Nicholson, T. (1997). Closing the gap on reading failure: Social background, phonemic awareness, and learning to read. In B.A. Blachman (Ed.), *Foundations of reading acquisition and dyslexia: Implications for early intervention* (pp. 381-407). Mahwah, NJ: Lawrence Erlbaum.
- Nicholson, T. (2005). *At the cutting edge: The importance of phonemic awareness in learning to read and spell*. Wellington, New Zealand: NZCER Press.
- Nicholson, T. (2007). "How many sounds in ox?" A survey of linguistic knowledge that teachers might need to teach reading and spelling effectively. *Set. Research Information for teachers*, 2, 29-34. Retrieved from <http://grs.massey.ac.nz/massey/fms/Colleges/College%20of%20Education/Documents/Albany/Tom%20Nicholson/Publications%202007/How%20many%20sounds%20in%20ox.pdf>
- NZMaths. (2020). *Implications of TIMSS*. <https://nzmaths.co.nz/implications-timss>
- Oakland, T., Black, J.L., Stanford, G., Nussbaum, N.L., & Balise, R.R. (1998). An evaluation of the Dyslexia Training Program: A multisensory method for promoting reading in students with reading disabilities. *Journal of Learning Disabilities*, 31(2), 140-147. doi: 10.1177/002221949803100204
- OECD. (2019). *Getting skills right: engaging low-skilled adults in learning*. <http://www.oecd.org/employment/emp/engaging-low-skilled-adults-2019.pdf>
- OECD. (2020). *The Shadows of the Coronavirus Educational Crisis*. <https://oecdedutoday.com/shadows-coronavirus-education-crisis/>
- OECD. (2021a). *OECD Skills Outlook 2021: Learning for Life*. OECD Publishing, Paris, <https://doi.org/10.1787/0ae365b4-en>
- OECD. (2021b). *Using Digital Technologies for Early Education during COVID-19: OECD Report for the G20 2020 Education Working Group*. OECD Publishing, Paris, <https://doi.org/10.1787/fe8d68ad-en>
- Pressley, M. (2014). *Reading instruction that works: The case for balanced teaching*. New York: Guilford Press.
- Potter, H., Taupo, K., Hutchings, J., & McDowall, S. (2011). *He whānau mātau, he whānau ora: Māori adult literacy and whānau transformation*. Wellington: New Zealand Council for Educational Research.
- Price, L.A., & Gerber, P.J. (2008). Adults with learning disabilities and self-disclosure in higher education and beyond. In G. Reid, A. Fawcett, F. Manis, & L. Siegel (Eds.), *The SAGE handbook of dyslexia* (pp. 457-473). London, England: SAGE.
- Purcell-Gates, V., Degener, S.C., Jacobson, E., & Soler, M. (2002). Impact of authentic adult instruction on adult literacy practices. *Reading Research Quarterly*, 37(1), 70-92. Retrieved from ProQuest Education Journals database.
- Rayner, K., Foorman, B., Perfetti, C.A., Pesetsky, D., & Seidenberg, M.S. (2001). How psychological science informs the teaching of reading. *Psychological Science in the Public Interest*, 2(2), 31-74. doi: 10.1111/1529-1006.00004
- Reder, A. (2022). *Reading Engagement and Wellbeing in Aotearoa New Zealand*. NZWork Research Institute. Auckland, NZ.
- Rice, M., & Brooks, G. (2004). *Developmental dyslexia in adults: A research review*. London, England: National Research and Development Centre.
- Sciascia, A. (2017). *Māori learner success in tertiary education: Highlights from Ako Aotearoa supported research projects*. Wellington: Ako Aotearoa.
- Shaywitz, S. (2003). *Overcoming dyslexia*. New York, NY: Vintage Books.
- Sheehan-Holt, J.K., & Cecil Smith, M. (2000). Does basic skills education affect adults' literacy proficiencies and reading practices? *Reading Research Quarterly*, 35(2), 226-243. Retrieved from ProQuest Education Journals database.
- Snow, C.E. & Juel, C. (2005). Teaching children to read: What do we know about how to do it? In M.J. Snowling and C. Hulme (Eds.), *The science of reading: A handbook* (pp. 501-520). Oxford, England: Blackwell.

- Spear-Swerling, L., & Sternberg, R.J. (1998). *Off-track. When poor readers become 'learning disabled'*. Boulder, CO: Westview Press.
- Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, 21(4), 340-406. Retrieved from EBSCO database.
- Tanner, K. (2009a). Adult dyslexia and the 'conundrum of failure'. *Disability and Society*, 24(6), 785-797. doi: 10.1080/09687590903160274
- Tanner, K. (2009b). "I'm crying too...help, what do I do?"- Unexpected encounters experienced by a first time researcher. *Current Narratives*, 1(7), 69-79. Retrieved from <http://ro.uow.edu.au/currentnarratives/vol1/iss1/7/>
- Tanner, K. (2010). *The lived experience of adults with dyslexia: An exploration of the perceptions of their educational experience* (Doctoral thesis, Murdoch University, Perth, Australia). Retrieved from <http://researchrepository.murdoch.edu.au/4128/>
- Tertiary Education Commission (TEC). (2010). *Getting results in literacy and numeracy*. Wellington, New Zealand: Tertiary Education Commission. Retrieved from <http://www.tec.govt.nz>
- Tertiary Education Commission (TEC). (2012). *Adult literacy and numeracy implementation strategy*. Retrieved from <http://www.tec.govt.nz/>
- Tertiary Education Commission. (2015). The Literacy and Numeracy Implementation Strategy 2015-2019. <https://www.tec.govt.nz/assets/Publications-and-others/c74aff1b80/Literacy-and-Numeracy-Implementation-Strategy-2015-2019.pdf>
- Tertiary Education Commission. (2017). *Guidelines for using the Literacy and Numeracy for Adults Assessment Tool*. <https://www.tec.govt.nz/assets/Forms-templates-and-guides/0869ebeb24/Guidelines-for-using-the-Literacy-and-Numeracy-for-Adults-Assessment-Tool.pdf>
- Tunmer, W.E., Chapman, J.W., & Prochnow, J.E. (2004). Why the reading achievement gap in New Zealand won't go away: Evidence from the PIRLS 2001 International Study of Reading Achievement. *New Zealand Journal of Education Studies*, 39(1), 117-145. Retrieved from ProQuest Education Journals database.
- Tunmer, W.E., & Chapman, J.W. (2007). Language-related differences between discrepancy-defined and non-discrepancy-defined poor readers: A Longitudinal study of dyslexia in New Zealand. *Dyslexia*, 13(1), 42-66. doi: 10.1002/dys.327
- Tunmer, W.E., Nicholson, T., Greaney, K.T., Prochnow, J.E., Chapman, J.W., & Arrow, A.W. (2008). PIRLS before swine: A critique of New Zealand's National Literacy Strategy. *New Zealand Journal of Education Studies*, 43(2), 105-119. Retrieved from ProQuest Education Journals database.
- Tunmer, W.E., & Greaney, K. (2008). Reading intervention research: An integrative framework. In G. Reid, A. Fawcett, F. Manis, & L. Siegel (Eds.), *The SAGE handbook of dyslexia* (pp. 241-267). London, England: SAGE.
- Tunmer, W.E., & Greaney, K. (2010). Defining dyslexia. *Journal of Learning Disabilities*, 43(3), 229-243. doi: 10.1177/0022219409345009
- Vorhaus, J., Litster, J., Frearson, M., & Johnson, S. (2011). *Review of research and evaluation on improving adult literacy and numeracy skills*. London: Department of Business, Innovation and Skills.
- UNICEF (2020). *Worlds of Influence: Understanding what shapes child well-being in rich countries, Innocenti Report Card 16*. UNICEF Office of Research - Innocenti, Florence, 2020. Retrieved from <https://www.unicef.org/nz/stories/new-report-card-shows-that-new-zealand-is-failing-its-children>
- van Lamoen, A. (2013). *Adult dyslexia in New Zealand: The Professional Development Needs of Adult Literacy Educators* (Thesis, University of Waikato, Hamilton: New Zealand). Retrieved from <https://researchcommons.waikato.ac.nz/handle/10289/7944>
- Vellutino, F. R., & Fletcher, J. M. (2005). Developmental dyslexia. In M. J. Snowling & C. Hulme (Eds.), *The science of reading: A handbook* (pp. 362-378). Malden, MA: Blackwell.
- Whitten, D. (2018). *Enhancing and measuring adult literacy and numeracy progress: Exploring practices, outcomes measures, and quality indicators*. Wellington: Ako Aotearoa.

- Windisch, H. (2015). *Adults with low literacy and numeracy skills: A literature review on policy intervention*. OECD Education Working Papers. No. 123. Paris: OECD Publishing. <https://doi.org/10.1787/5jrxnjdd3r5k-en>
- Wolf, M. (2007). *Proust and the squid: The story and science of the reading brain*. New York, NY: HarperCollins.

Nā āheitanga ā-mātauranga,  
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