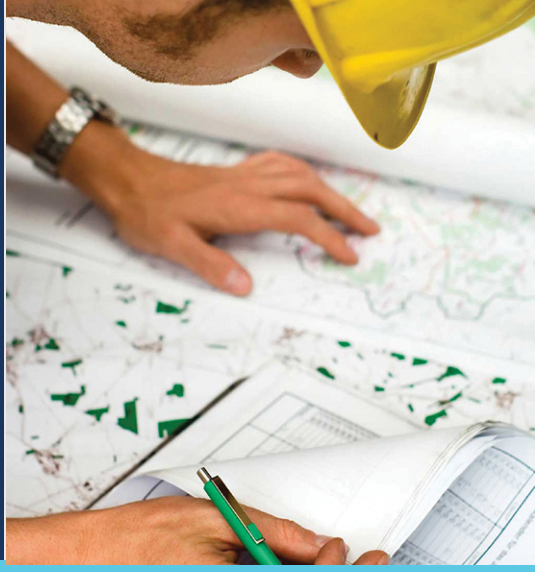


Learning a Trade

Supporting learners by understanding how tradeswork is learnt; with ideas on how to teach trades learners using practice-based learning; and through the use of technology.

February 2020

Ako
AOTEAROA

Purpose of this guide

This guide brings together the ideas based on work undertaken over the last 15 years focused on how to best support learners to 'learn a trade'.

How to use this guide

The guide provides brief overviews of each topic. The links and references in section 4, along with Ako Aotearoa Professional Learning workshops and e-learning courses, provide the opportunity to extend learning.

The concepts provided in this guide are also detailed in an academic book:

Chan, S. (2020). Identity, pedagogy and technology-enhanced learning: Supporting the processes of becoming a tradesperson. Singapore: Springer. www.springer.com/gp/book/9789811521287

Learning a Trade

In this brief guide, the learning and teaching of trades work are presented. The ideas in this booklet are based on work undertaken over the last 15 years, studying how to best support the 'learning of a trade'.

The guide has FOUR sections.

1. The concepts of 'learning a trade'.
2. Guidelines for teaching a trade including ideas for technology-enhanced learning.
3. Studying learning and teaching to improve learning for trades learners.
4. Resources – links and references to 'dig deeper'.

Introduction

Trades work is challenging and often difficult to learn. Learners require support and guidance and need to put in many hours of practice. In this guide, the learning of a trade is proposed to be a process of BECOMING. That is, through learning trades work, one becomes a tradesperson.

To help learners learn how to become, they must firstly be helped to BELONG to the workplace. Then the LEARNING TO BECOME and BE tradespeople may occur.

LEARNING AS BECOMING includes learning how to DO, THINK, FEEL and BE a tradesperson.

In the diagram on the next page the contributors to the process of learning to become are summarised.

The three contributors are:

1. Individuals' construction of meaning of how knowledge, skills and dispositions/attributes occur. This requires the individual to participate in trades work, make meaning of their work and align or connect knowledge into their practice.

2. Contributions from others (i.e. sociocultural relationships) is important to help learners make sense of, support and provide feedback on their learning. The feedback can come from other workers, teachers/tutors, supervisors, trainers etc.

3. Learning through using tools, machines and the materials of the trade (i.e. connections with the sociomaterial aspects of trades work) ensures learners are able to connect with the often difficult to describe elements of trades work. – For example how carpenters and joiners learn to 'feel the wood' and adjust their movements and tool use when working with different types of wood.

LEARNING as BECOMING
Doing
Feeling
Thinking
Being
Individuals' construction of meaning
Contributions from others
Learning through using tools, machines, materials

Learning a trade

Learners learn how to BECOME tradespeople through OBSERVATION, IMITATION and PRACTICE (aka mimetic learning) and support through FEEDBACK on learning.

Observation

Learners see, feel, hear, sense, etc. the types of work required to complete job tasks. These tasks are modelled to them by other workers as work proceeds. Often, learning through observation occurs while the learner is working and observes other work tasks occurring around them. It is important to help beginners by:

- Structuring learning from 'easier' to more complex tasks. Providing learners with the opportunity to 'see' the 'end result' or 'whole task'.
- Allowing learners to observe conversations taking place when work tasks or end products are being discussed. This helps learners attain a sense of the quality standards required.

Imitation

Learners repeat the actions they have observed. Through imitation, they 'make visible' their initial attempts at completing the tasks. The learners' 'doing' is an opportunity for others (peers, workers, trainers, supervisors etc.) to provide FEEDBACK on the work.

Practice

DELIBERATE PRACTICE is the process used to refine trades work. Practice is therefore not just repetitive work, but MINDFUL and REFLECTIVE work to improve practice. FEEDBACK is attained as work progresses from three sources:

- The learners' body and thoughts produce messages for adjustments in work tasks.
- SOCIOCULTURAL feedback from others help learners hone practice.
- The sensing of messages from the SOCIOMATERIAL aspects of work (i.e. tools, machines, materials) help learners fine-tune their actions.

Feedback

FEEDBACK is key to achieving craftsmanship. To be effective, it is important to match the feedback cycle to learning. The feedback cycle includes:

- FEED UP – is the learner on the right track?
- FEEDBACK – how has the job or task gone?
- FEED FORWARD – what needs to be done to improve on the job or the task the next time around?

Guidelines for teaching a trade

SUGGESTIONS FOR IMPROVING TEACHING A TRADE

Aligning learning as becoming with graduate profile outcomes

Qualifications learners are working towards, lead to the attainment of graduate profile outcomes. These outcomes may not always capture the entirety of 'BEING' a tradesperson. Learners will also come to 'BECOMING' through various pathways, learning journeys and work contexts.

Supporting mimetic learning and the importance of feedback

The learning of trades work through observation, imitation and practice is undertaken through learning at work and in workshops or practical teaching areas during off-job training.

Practical workshops consist of:

- demonstration to provide the observation part of learning.
- practice – beginning with imitation and then
- follow through with DELIBERATE practice.

Project/inquiry/ problem-based learning

Many trade learning modules or activities centre on the completion of a 'project'.

Project-based learning: It is important to ensure the doing of the task, is also supported by REFLECTIVE practice.

Inquiry-based learning: Here, learners are supported to extend on their learning through undertaking 'research'. Learners identify and evaluate resources assisting them to learn.

Problem-based learning: Learners are set a challenge or problem to solve. The need to apply the knowledge, skills and dispositions already learnt to come up with a solution.

Technology enhanced learning

Digital technology is helpful for learner and tutors. Videos and photos help capture some of the visual, audio and movement aspects of trades work. The range of possible technology-enhanced learning (TEL) approaches is large and can range from the using online review quizzes to the simulation of learning tasks with Virtual Reality (VR).

It is important to:

- Identify the learning outcome to be accomplished through technology-enhanced learning.
- Match the right type of technology to the learning.
- Ensure both tutors and learners are supported when using technology.

Digital literacy

To maximise the benefits from integrating digital technologies into learning activities requires both teachers and learners to be digitally literate. This includes:

- Sufficient reading comprehension as many digital tools use text based instructions.
- Fluency with the relevant operating system (Windows, MacOS, iOS, Android).
- Ability to critically evaluate the information obtained through the use of digital tools.

Enabling feedback

Supporting deliberate practice

It is not so much the recording of learner activity but HOW the video is then used which is important. Video can be a useful resource for learners. They can help learners:

- View and reflect on their practice.
- Work out how much they are already able to do and identify strategies to progress their learning.

Using video to support mimetic learning

Video of 'expert' or tutor demonstrations are useful as a reference resource. They help learners:

- Unpack the intricacies of complex skills.
- Learn to observe specialised forms of work.
- Identify and discuss examples of good practice.

Using note-taking platforms

Note-taking platforms are exampled by Google docs and Microsoft OneNote Class Notebook. They provide the means for teachers to be able to see learners work as learning progresses.

For Project/inquiry/problem-based learning the note-taking platforms have these functions:

Student notebooks can be seen by individual students and tutors.

Students access their individual notebooks to take notes, archive photos/videos collected from practice and complete set learning activities.

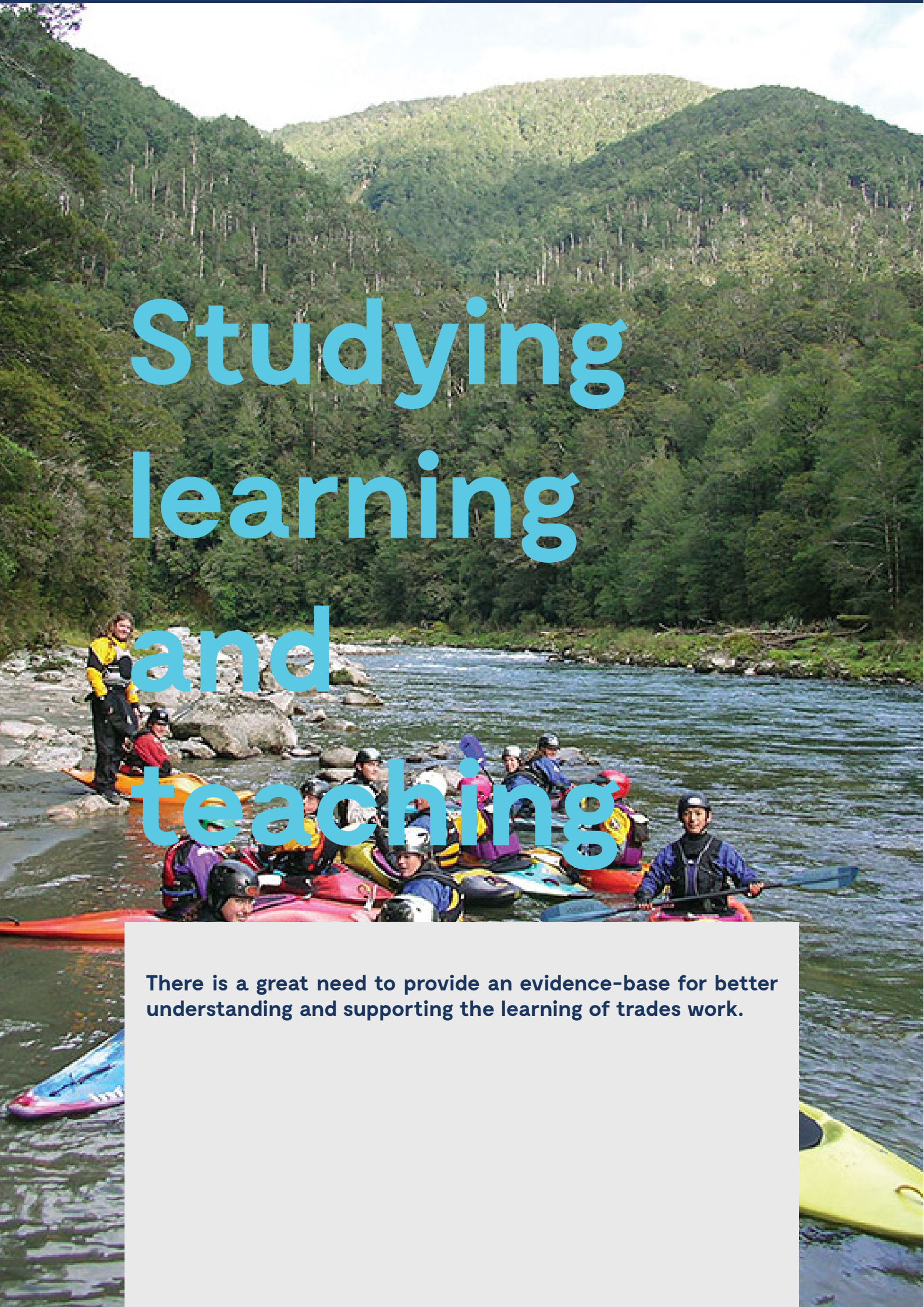
The tutor and individual student are both able to read and write to but other students do not have access.

The content library allows content, templates, etc. to be shared with students. Only tutors have access to this section and are able to add and edit materials.

A collaboration space provides the platform for tutors and students to share, organise and collaborate. This space is available to everyone, tutor and all students to read and write to.

Learning at work

Apprentices or full-time pre-trade students on work placement are supported to log their on-going work. Teachers are able to see, in real-time, how students are progressing and are able to provide appropriate feedback or support.



Studying learning and teaching

There is a great need to provide an evidence-base for better understanding and supporting the learning of trades work.

Scholarship of teaching and learning

This is a structured process to study teaching and learning processes and systems. In general, much of the research in trades learning is conducted by researchers who are not trade teachers. It is important to build capability and resource the scholarship of trades teaching and learning. Scholarship also includes the need to share findings, results and recommendations with other teachers and researchers.

Participative practice-based 'research'

Effective study of learning and teaching practice is enhanced when teachers, learners and their supporters are included in the process. Participative practice-based research implies the active involvement of learners, teachers, 'researchers', learning supporters, employers etc. in identifying the 'questions' the study seeks to investigate and in the activities proposed to help 'answer' the 'question'.

Inquiry cycles

Inquiry cycles are one way to structure the study of teaching and learning. The cycles can be worked through one or more times to help find solutions, create innovations or help with informing imposed change on the teaching and learning environment. The steps are scanning, focussing, developing a hunch, learning, taking action, and checking.

- Scanning – the specific challenge or problem is identified. It involves obtaining information about how learning is going for learners/or teaching is going for teachers.
- Focussing – identifies the key area to work on which will lead to a difference for learners/teachers.
- Developing a hunch – the 'research question' is identified, and researcher/teacher assumptions and perspectives are checked. The 'research question' may be tweaked as the cycle progresses.
- Learning – seeks to understand the challenge and come up with workable solution/s.
- Taking action – putting into action some change, new activity or support to help learners/teachers.
- Checking – the action taken is evaluated through conversations with the learners/teachers who have participated in the action. Recommendations then form the basis of the next cycle.

Resources

Links are provided to the various reports on the studies undertaken to inform the concepts and guidelines presented in this booklet.

Learning a trade

Chan, S. (2011). Belonging to a workplace, becoming and being: First year apprentices' experiences in the workplace.

https://ako.ac.nz/knowledge-centre/first-year-apprentices-in-the-workplace/belonging-becoming-and-being-first-year-apprentices-experiences-in-the-workplace/

Chan, S. (2013). Learning a trade: Becoming a trades person through apprenticeship. Ako Aotearoa Southern Hub.

https://ako.ac.nz/knowledge-centre/learning-a-trade-becoming-a-trades-person-through-apprenticeship/learning-a-trade-becoming-a-trades-person-through-apprenticeship/

Holland, C. (2012). Maori and Pasifika apprentices and relational mentoring: A success story for the Skills Organisation.

https://ako.ac.nz/knowledge-centre/maori-and-pasifika-apprentices-and-relational-mentoring/

Kear, A., Vaughan, K. & Gardiner, B. (2012). Taking charge of your apprenticeship.

https://ako.ac.nz/knowledge-centre/industry-led-assessment/guide-taking-charge-of-your-apprenticeship/

Savage, C. (2016). Supporting Maori apprenticeship success through mentoring and building employer capability.

https://ako.ac.nz/knowledge-centre/supporting-maori-apprenticeship-success/summary-supporting-maori-apprenticeship-success-through-mentoring-and-building-employer-capability/

Technology-enhanced learning

Chan, S. Fisher, K., & Sauer, P. (2012) Situated technology-enhanced learning through development of interactive etextbooks on net tablets.

https://ako.ac.nz/knowledge-centre/situated-technology/enhanced-learning-through-development-of-interactive-etextbooks/

Chan, S., McEwan, H. & Taylor, D. (2013). Extending hospitality students' experiences of real-world practice.

https://ako.ac.nz/knowledge-centre/guidelines-for-improving-students-reflective-practice-and-digital-evaluation-skills/guidelines-for-improving-students-reflective-practice-and-digital-evaluation-skills-derived-from-a-study-with-hospitality-students/

Chan, S., Baglow, L., Chapman, S., Gropp, J., Hamilton, K., Lyster, A., Pati, K., Power, K., Lovegrove, C., Stokes, C., & Warburton, A., (2019). Multiliteracies-based e-assessments: Developing guidelines for effective e-assessments for learning. Ako Aotearoa.

https://ako.ac.nz/knowledge-centre/e-assessment-for-vocational-learners/

Frielick, S. et al. (2016). Learners and mobile devices: A framework for enhanced learning and institutional change. Wellington, New Zealand: Ako Aotearoa.

https://ako.ac.nz/knowledge-centre/learners-and-mobile-devices/

Studying the teaching and learning of trades work

Chan, S. & Leijten, F. (2011). Guidelines for using video to study workshop or workplace-based trades learning. Wellington, New Zealand: Ako Aotearoa

https://ako.ac.nz/knowledge-centre/guidelines-for-using-video-to-study-workshop-or-workplace-based-trades-learning/guidelines-for-using-video-to-study-workshop-or-workplace-based-trades-learning/

Haigh, N. (2010). The scholarship of teaching and learning: A practical introduction and critique. Wellington, New Zealand: Ako Aotearoa.

https://ako.ac.nz/knowledge-centre/the-scholarship-of-teaching-and-learning/the-scholarship-of-teaching-and-learning-a-practical-introduction-and-critique/

Teaching a trade

Chan, S. (2009) The scholarship of craftsmanship: The perspectives of trades people becoming vocational educators. Wellington, New Zealand: Ako Aotearoa.

https://ako.ac.nz/knowledge-centre/perspectives-of-new-trades-tutors-towards-a-scholarship-of-teaching-and-learning-for-vocational-educators/

Ako AOTEAROA

ako.ac.nz/knowledge-centre/