# Ako Explored

## Evidence-based learning and teaching practices that enhance quality of outcomes in tertiary education in Aotearoa: The kaiako's role

**Linda Keesing-Styles for Ako Aotearoa**

Ako AOTEAROA

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**Publishers**
Ako Aotearoa – The National Centre
for Tertiary Teaching Excellence
PO Box 756
Wellington 6140
www.ako.ac.nz
0800 MYAKONZ
info@ako.ac.nz

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## Foreword

Ako Aotearoa (the National Centre for Tertiary Teaching Excellence) was established in 2007 with a mission of building the quality of tertiary teaching in Aotearoa.

Since its establishment Ako Aotearoa has provided resources and opportunities to enhance and advance the profile and recognition of excellent tertiary teaching and the practice of teaching across the sector. While focussing on the teaching side of education, it has always been profoundly concerned with education approaches that lead to the most successful outcomes for learners - surely, the fundamental aim of all teaching.

Reaching the whole tertiary sector is a complex task. The sector encompasses a wide range of post-school provision including continuing, technical, and academic education and training, delivered in a variety of settings and modes by an equally diverse range of institutions and provider organisations.

Moreover, the range of tertiary students and learners is vast in terms of age, educational background, and cultural and ethnic identity, and equity of outcomes across the different learner groups has been an elusive goal. That disparity confronts us all in the development of tertiary education and its delivery.

Recently, the Board of Ako Aotearoa was challenged by the Tertiary Education Commission and the government's 2020 Tertiary Education Strategy, to even more closely connect the advance of teaching practice and education development with the need for improvements in equitable learner success.

This document, the result of a project initiated in late 2021, is part of the response to that challenge. It is pleasing to see its research-based, principles and practices now made available to tertiary educators throughout the sector. The material's flexible utility and multi-modal potential have been specifically designed for the greatest reach and supportive impact.

In addition to commending this excellent resource to all who work with our nation's tertiary students and learners, I want to acknowledge with thanks Linda Keesing-Styles for her hard work in putting this together. I also want to thank the staff and individual Board members of Ako Aotearoa who supported the work.

Derek McCormack

Chair

## Whāia te mātauranga hei oranga mō koutou

This whakatauki refers to the importance of learning for it is key to your wellbeing.

# 1 Introduction

This synthesis and the accompanying principles and practices came about as a response to a challenge to the Board of Ako Aotearoa from the Tertiary Education Commission. Key staff identified Objective 3 of the Tertiary Education Strategy: Quality teaching and leadership makes the difference for learners and their whānau[1], as the number one priority for Ako Aotearoa. The Board accepted the challenge which resulted in the project to identify key evidence-based practice that is proven to make a difference for learner outcomes.

There are multiple ways for the document to be used. It is intended to be of value to educators across all sectors of tertiary education. It is presented as context neutral, with applicability to all those who have a role in facilitating learning in a range of settings.

The principles and practices embedded here are designed to be used for professional learning and development in multiple modes.

- Individual educators may find ways to consider and implement the ideas presented here in their own practice.
- Teams may regularly take elements and discuss them in relation to making adaptations to their teaching practice.
- Professional developers and advisors may also use sections to create professional learning opportunities for educators in diverse contexts.
- Tertiary education organisations may find practices worthy of embedding across their educational provision.

The questions for consideration help educators to think about how the principles and practices apply in their own context.

[1] https://assets.education.govt.nz/public/Documents/NELP-TES-documents/FULL-TES-2020.pdf

## Learning and teaching in Aotearoa New Zealand

Teaching is a complex endeavour. The word 'teaching' acknowledges the broad array of educators in the adult and tertiary education sector, whether they be tutors, lecturers, trainers, educators, kaiako or others responsible for the educational process. In this document, educators and kaiako are used interchangeably to capture this role.

Regardless of context, learning and teaching require consideration of a range of factors and, whilst much research has identified particular themes, principles, strategies, and approaches, there is no unifying theory of adult learning that covers all contexts and explains definitively the nature of learning and teaching in tertiary education.

In Aotearoa New Zealand, tertiary education is extremely diverse in a multitude of ways. Ako Aotearoa has one of the most complex remits in providing leadership and guidance and acting as 'an agent of change for quality teaching and learner success'[2] for contexts including work-based learning, foundation education, vocational education, wānanga, universities, adult and community education, and more. The diversity of learners within these contexts is equally exciting and challenging and educators are tasked with creating learning environments that attend to this diversity and ensure equity in success for learners. That is a tall order.

There is no mandatory qualification for tertiary educators and, while some have teaching qualifications, many do not. This adds to the complexity of the learning and teaching process in tertiary education. While their colleagues in all other education sectors hold at least an undergraduate degree in education/teaching, tertiary educators are not required to do so, and many find themselves teaching with disciplinary expertise but little in the way of preparation for quality teaching and learner success. It is a tribute to many that successful outcomes for learners are achieved in this complex environment.

Ako Aotearoa is profoundly interested in approaches to learning and teaching that lead to successful outcomes for learners. Successful outcomes relate not just to qualification achievement, but most importantly to positive learning experiences that engage ākonga/learners and enhance their potential to maximise social, emotional, and academic outcomes as a result of their participation in tertiary learning.

This publication outlines principles and practices that assist kaiako to implement a range of effective learning and teaching strategies to enhance learner success in a broad range of educational contexts, based on a review of a wide range of relevant literature.

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[2] https://ako.ac.nz/about-us/our-work-2/

## Ako – the reciprocal processes of learning and teaching

At the heart of the synthesis is the interrelationship between learning and teaching that we know as the reciprocal process of **ako**.

The foundational work in conceptualising this reciprocal process of ako for education was done by Dr Rangimarie Rose Pere (1982, 1994), who adapted the cultural concept from te ao Māori. Pere also published influential work on the principles and practices of learning and teaching, along with the cultural philosophies that lead to successful outcomes for Māori learners. Indeed, several authors referenced here cite Pere as a key theorist who influenced their later writing.

Conceptualisations of ako have subsequently been adapted and embedded widely in contemporary education, not solely in tertiary education, and it is this notion of the interconnectedness of the processes of learning and teaching that forms the basis of this synthesis.

Given that the goal is to determine what makes a difference for learners and their outcomes, the preferred terminology in this document is 'learning and teaching' as it foregrounds the learner. However, the more common 'teaching and learning' is used where it is a formal reference or where this terminology is used by a key author whose work is being reviewed.

While ākonga, students as learners, are at the heart of this mahi, the practices described here are those which kaiako (inclusive of a university lecturer, an employer on a worksite, a foundation education tutor, a tutorial assistant, a community educator, or any other person who has a primary responsibility for the tertiary learning and teaching process) will undertake to improve the conditions for learning and subsequent success for all learners. Complementary work should be undertaken to provide a similar guide written from the ākonga perspective and for ākonga.

The reader will note that the principles and practices outlined encourage all kaiako to consider the process of learning from the learner's perspective and develop their own practice in ways that honour what we have learned about how to enhance success for ākonga in a wide range of tertiary education contexts.

## Overview of the literature synthesis

A set of principles and indicative practices is outlined in this document. These have been extracted and refined from an overview of a broad range of literature to determine, through theoretical and practice-based evidence, what overarching approaches are proven to positively influence learning.

While the bulk of the literature reviewed is in the context of tertiary education, some highly influential work from the schooling sector has been included for several reasons. Education, regardless of context, has many commonalities and it is important to consider practices that contribute to successful transition from school to tertiary education. And work such as Hattie's *Visible Teaching (*2009) and Evidence-based Education's *Great Teaching Toolkit* (Coe, Rauch, Kime, & Singleton, 2019) are wide-ranging meta-analyses that offer valuable insights in considering what effective practice looks like.

The synthesis also includes consideration of issues highly relevant in Aotearoa New Zealand in terms of equitable outcomes including, but not limited to, Kaupapa Māori and approaches for Māori students in mainstream education, learning and teaching for Pacific Peoples, and successful outcomes for learners with diverse learning needs. It also considers the challenges that have been evident for some time, and exacerbated by the Covid pandemic, including effective open, distance and flexible learning (ODFL) and specifically digital learning, and attention to student wellbeing and hauora as an integral component of the education process. It also touches briefly on what we can learn from neuroscience. Both local and international literature has been reviewed and mapped to determine a core set of principles that commonly appear as critical for positive learning experiences and outcomes.

The literature synthesis is included later in this document for those with an interest in reading the material that contributed to the development of the principles and practices.

# 2 Principles and Indicative Practices

In the following section, key ideas from the literature synthesis have been analysed and developed into principles and indicative practices that are representative of a broad range of theories, perspectives, and evidence-based practice. Each principle has been developed from analysing literature with a focus on effective teaching, technology-enabled learning and teaching, Aotearoa-based perspectives, what we've learned about hauora and wellbeing, work-based learning, and more.

The principles assume that the educator comes with strong disciplinary knowledge in their field of expertise, and they assist with consideration of how to use this knowledge best to enhance student learning. They also see knowledge as only one of the key areas to focus on and consider learning as three active and interconnected processes – knowing, doing, and being. (See diagram overleaf.)

The process of analysis has incorporated the diverse literature and perspectives in arriving at a set of principles that are proven to impart positive outcomes for ākonga. The principles are presented as context neutral. That is, they apply across multiple contexts, learning sites, and situations, and it is in the application of them that the nuances and specific practices arise.

Subsequent to this publication, Ako Aotearoa will work with sub-sectors of tertiary education to produce guides for a range of types of learning, and to identify how the principles are best considered for specific contexts such as, for example, work-based learning, and/or open, distance, and flexible learning (ODFL).

Each principle is presented in several parts:

1. A simple statement of the principle represented in relation to ako – the reciprocal process of learning and teaching that sits at the heart of this work.

2. An overview explanation of the principle that brings together key aspects derived from the literature.

3. A brief summary of the benefits of the principle derived from the literature.

4. A set of indicative practices framed as 'what might this look like in practice?'. These are not comprehensive, but rather some examples of evidence-based practices that indicate how the principle might be put into practice. There are many more.

5. Questions for consideration that ask the educator or facilitator to think specifically about their particular context and how the principle might be implemented with their ākonga and in their disciplinary practice. These can usefully be discussed with colleagues.

Links to two recent publications supported by Ako Aotearoa.

*Ngā hau e whā o Tāwhirimātea: Culturally responsive teaching and learning for the tertiary sector* (Rātima et al., 2022) focuses specifically on what culturally responsive teaching looks like, particularly in relation to ākonga Māori.

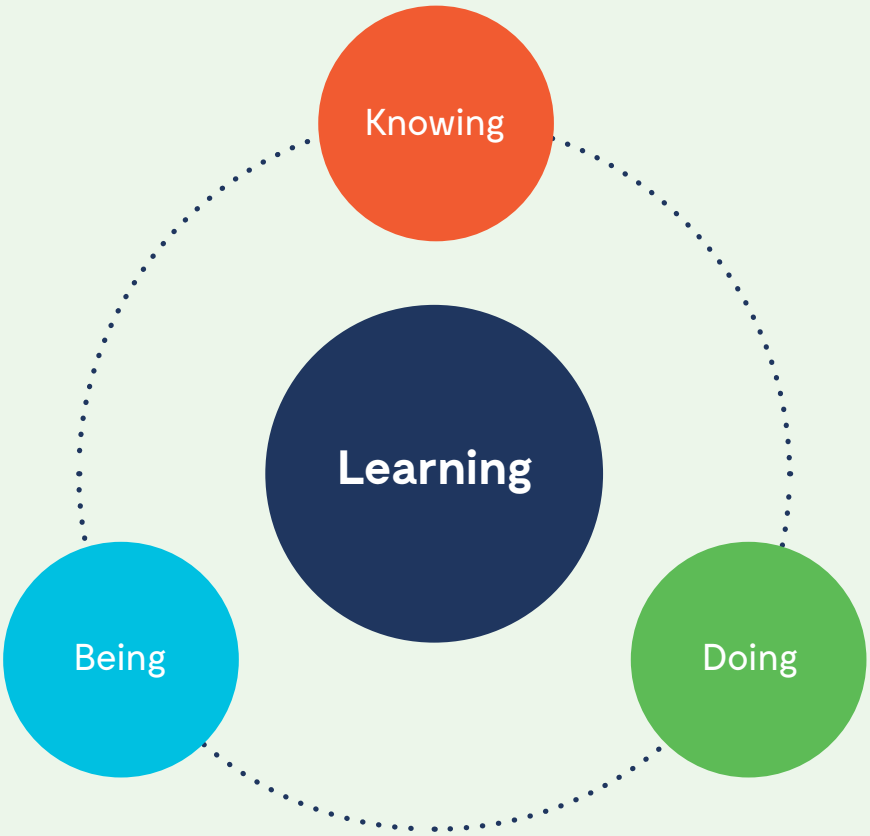
*From good to great: The 10 habits of phenomenal educators for Pacific learners in New Zealand tertiary education* (Chu-Fuluifaga & Ikiua-Pasi, 2021) describes proven successful practices for working with Pacific learners.

These are included in the bibliography and elements of them woven into the practices and questions. Again, these are indicative connections with greater riches available through a comprehensive read of each of these publications.

It is important to note that each principle does not stand in isolation from the others and, therefore, readers will note a degree of repetition or cross-referencing in the principles, practices, and questions. This is the nature of ako – it is a reciprocal and integrated process.

# Elements of the Learning Process

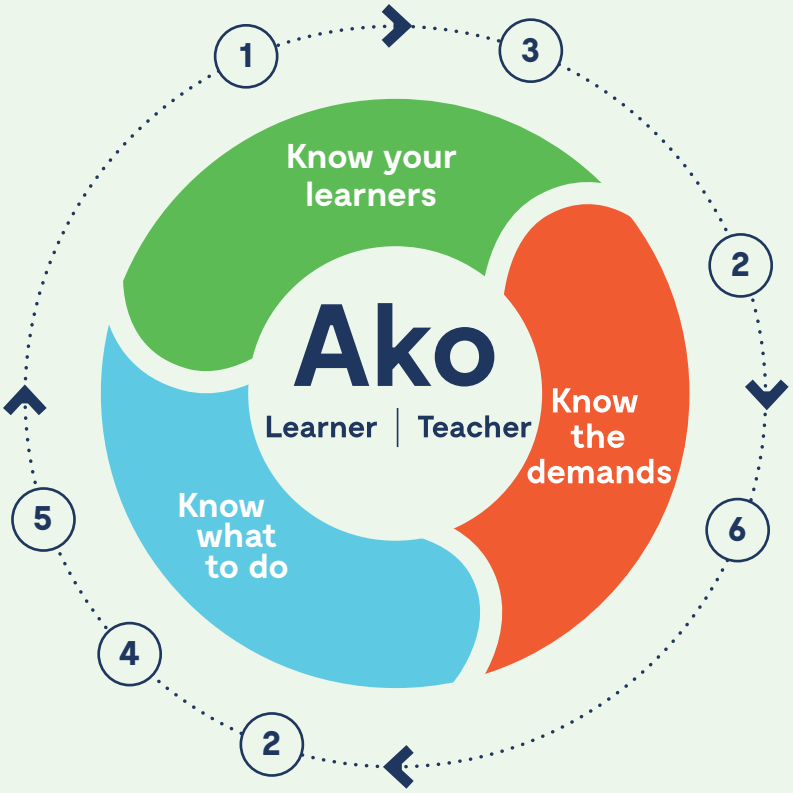
Processing content or knowledge to progress thinking, understanding, meaning-making, learning, and to work towards active knowing in multiple contexts.




Engaging the whole person to progress motivation, openness, engagement, identity formation, resilience, agency, transformation, imagination, and courage to act.

Active engagement in experiences, activities, skills development, design, problem-solving, discussion, and more to progress dynamic capabilities for work and life.

## Inter-relationships between the principles




**PRINCIPLES**

1. Know who they are, what they bring and can do
2. Use evidence-based practice

   Identify where the challenges are
3. Foster relationships
4. Emphasise doing, experience and reflection
5. Align your learning and teaching elements
6. Have high expectations and support learners to achieve them

# Principle 1

## The foundation of effective ako is in knowing ākonga, the strengths they bring, and the challenges they face in learning.

### What does this mean?

There is so much embedded in this principle. The first key point is the importance of knowing who your ākonga are. While it won't always be possible to know all the significant factors affecting every student, knowing generally who your learners are and what this means in terms of teaching practices, makes a significant difference to learning and outcomes.  Factors to consider include the learners' backgrounds and experience, their strengths and potential challenges; whether they are school leavers, mature students returning to study, international students, professionals in work; and whether they are Māori or Pacific learners or new to New Zealand. Universal Design for Learning (UDL) principles (see Meyer, Rose & Gordon, 2014) are critical in that they assist us to consider the diverse backgrounds of learners and the accompanying strengths they bring and challenges they face. Such matters are all central to determining how teaching might be adapted accordingly.

The second aspect to consider is knowing the demands of your curriculum, content, and learning processes. This implies not only content knowledge but also a focus on ākonga 'knowing, doing, and being' (Barnett, 2004). Others refer to this as knowledge, skills, and attitudes or dispositions, though not in the same way that Barnett defines these, which is always active (know**ing**, do**ing**, and be**ing**), and with a focus on development of the person for thriving in complex and uncertain conditions. Fundamentally, the second aspect concerns the key components to be learned, but then focuses on considerations such as what might be troublesome knowledge, which areas are likely to be attached to prior experience and learning, where might ākonga potentially need extra support, and what are the specific challenges of the learning context.

As someone with disciplinary expertise, you will know these components and challenges. Taking time to identify them and consider how best to introduce them is a critical step before learning and teaching begins.

### What are the benefits?

Knowing your ākonga and the demands of the learning, provides the foundation for effective teaching. Together this knowledge lays the groundwork for the other principles that follow, and these foundational elements are embedded in many of the principles that follow. Adapting to your particular ākonga, throughout their learning processes, ensures the learning remains accessible, relevant, targeted, and more likely to result in successful outcomes.

## What might this look like in practice?

1. Review enrolment data and gather whatever information you can find about your ākonga before the learning process starts.

2. Check out what universal design for learning practices might offer in terms of how you structure your learning for the diversity of ākonga in your cohort. Use the UDL principles to help identify barriers to learning, and remove these, when planning learning and teaching activities.

3. Identify practices that are proven effective for your particular ākonga in your context. For example, what works best for Pacific Peoples, and/or for those currently in work. Consider also the demands of the particular context, for example, online or distance learning. There is a wealth of information available from many sources including colleagues.

4. Before you begin your work with ākonga, revise the content you are going to be covering. You are an expert in the discipline but consider what has to be learnt from the perspective of ākonga. Determine which aspects of the learning are likely to be challenging but are central to their understanding and progression.

5. Look closely at the learning demands of your content and process. Map the demand to the NZQA level descriptors, which can be found on pages 29 and 30 of the NZQA framework document.[3] Make sure your learning outcomes, learning and teaching activities, and especially assessment, are at the correct level of learning demand.

6. As your delivery model allows, build in early opportunities to learn more about your ākonga and for them to learn more about each other. Present yourself as approachable, and interested in them and their learning.

7. Avoid leaping straight into content before doing some work to build interest, participation, and a platform for success. Learning is a holistic process that involves cognitive, social, emotional, cultural, and other elements. It is not a disembodied thinking process.

8. Make the intended learning outcomes explicit early and reinforce them regularly. Help your ākonga to know where to focus their attention and energy and revisit key information as needed.

9. Where possible, use learning analytics to monitor learning and adjust practice accordingly.

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[3] https://www.nzqa.govt.nz/assets/Studying-in-NZ/New-Zealand-Qualification-Framework/requirements-nzqf.pdf

10. Find ways to relook at teaching, thinking, and learning through the eyes of the learner and address this through trying a range of different approaches. Focus on learning as ako which sees ākonga as partners in the process of learning. Allow them to lead where appropriate.

## Questions for consideration

a. What can you do to balance appropriate professional distance with being available and supportive for learners? How do your ākonga know that you care about them and their learning? How is their wellbeing supported through the teaching, learning, and assessment process?

b. What tools, strategies and activities can you use to get to know your learners better? Have you considered attitude surveys, soft skills surveys, focus groups, learner presentations?

c. What will help you identify your learners' strengths? How can you find opportunities to show learners what strengths they have? How can you encourage learners to utilise their strengths to support their areas for development?

d. When and how do you assess the learning demand of the material to be covered? What can you do to ensure these demands are attended to in the learning, teaching, and assessment practice in ways that make them manageable for ākonga?

e. What knowledge might your ākonga find 'troublesome'? In what ways do you make this evident and reinforce the importance of them understanding these concepts? Will you make time to ensure key ideas are learned before progressing to further learning?

f. What opportunities can you take to explain the learning outcomes, ensuring all ākonga know what they are and what they mean? How and when do you revisit them? In what ways do you help your ākonga to relate these to assessment expectations?

g. What are the particular learning and teaching challenges of your context that make knowing and responding to your ākonga difficult? How can you address or reframe these?

h. What can you do to ensure ākonga know that they are partners in the learning process? In what ways is your teaching structured to build their participation, capability, and agency over their own learning? What do you do, as a team, to tackle non-participation?

## Ngā hau e whā o Tāwhirimātea

— How am I embodying whanaungatanga across all aspects of my teaching – in class, in my informal interactions with students, in assessment, and in feedback?

— What did my students teach me about this concept/topic/activity?

— How do I create an environment based around the competency of ako (reciprocal learning)?

## Phenomenal Educators for Pacific Learners

A phenomenal educator:

— demonstrates respect to students

— knows how to provide student support

— knows when to listen to students

— has the ability to develop authentic relationships

# Principle 2

## Knowing and using targeted and relevant practices to achieve successful outcomes with ākonga, will strengthen and improve ako.

### What does this mean?

Essentially this is what this document is all about – knowing what to do to enhance learning outcomes. And remember, learning outcomes do not just mean getting the qualification but also include ākonga being engaged, enjoying their learning, experiencing success, and wanting to learn more. Remember that learning engages and affects the whole person. Move beyond the primary focus being on content to include learning processes that attend to attitudes, dispositions, and values.

Once you know your learners and you are clear about what the learning demands are, the third step follows naturally. This focuses on knowing what to do to enhance learning for your particular ākonga, based on your knowledge of the demands of the material, the learning processes, and challenges ākonga will encounter. Here a range of effective learning and teaching practices, derived from the literature and practice-based evidence, and adapted for context, will be a central consideration.

Many educators will have some considerable knowledge of how to teach successfully, but for others, effective teaching can be a bit of a mystery. The principles outlined here cover some of the key practices that improve learning and teaching, but there are always more that you can learn and use. For example, have you considered the evidence from neuroscience as to what makes learning stick? (See Davis, Balda, Rock, McGinniss, & Davachi (2014), and the brief coverage in the literature section.)

Effective educators engage in professional learning. Enhancing your own learning is key. Looking after yourself, your own wellbeing and your professional learning and development needs is invaluable in teaching effectively and enhancing learning for ākonga. This is ako at its best.

### What are the benefits?

The importance of listening intently to your learners and then adapting accordingly cannot be underestimated. Knowing your learners, the demands, and what to do sets a positive platform for learning and will likely improve learners' engagement and success. Being prepared to listen, adapt, repeat, or reframe has the potential to progress or consolidate learning that might otherwise have remained problematic.

Ramsden (1992) suggests that other principles of effective teaching count for little if educators don't assess the impact on students and adjust teaching accordingly.

## What might this look like in practice?

1. Check out evidence-based practices that are proven effective for your particular learners and determine how you can adapt them for your context. The bibliography included in this document has some great starting points but there are many professional development opportunities that might also help.

2. Mix and match a range of different learning practices to engage all your learners and accommodate their learning preferences.

3. Build in practices that encourage active participation and opportunities for your ākonga to engage with the content and each other, and to challenge thinking, fixed practices or methodologies, or misunderstandings, including your own.

4. Help your ākonga overcome anxieties related to previous negative learning experiences and outcomes. Make it clear that you understand the impact of these experiences and want to ensure they don't occur in your learning processes. Take time to identify these as they arise and purposefully attend to them. Consider ways in which you can optimise positive emotions to improve learning.

5. Notice when elements of ākonga thinking and/or practice need reframing or redirection. Manage this not as a learner problem but as a teaching issue.

6. Feel comfortable to go back over material to help your ākonga understand and make meaning of the information and process they are engaging with. This is the purpose of learning and will enhance success. Think, evaluate, adapt, and cycle back to reinforce.

7. Use ongoing evaluation processes where ākonga provide feedback on the learning process in real time. Keep these manageable and targeted and report back on the outcomes of your reflection on these to the ākonga as soon as possible.

8. Weave in low stakes assessments including formative assessment (that which informs the learning) from very early in the course or programme to help you understand how your ākonga are doing. It will assist them in monitoring their own progress and clarifying what's required. Doing this helps build early success, encourages motivation, and establishes a platform for progression.

9. Explain how you're adapting practice based on assessment outcomes, feedback, and your reflection. Make it safe for everyone to engage in this process and value its outcomes.

10. Attend to your own professional learning and development needs. Teaching is not static, and we continue to learn more about what is effective for improving ākonga success.

## Questions for consideration

a. What do you know about your own teaching identity and preferences? How do you balance your disciplinary expertise and your teaching expertise? What are your personal reflection strategies and how do you adapt as required?

b. How do you know if your teaching is having successful outcomes? How do you decide when to make changes?

c. How do you use learner error constructively? What will you do to help them see the value of errors as learning moments?

d. How will you gather ongoing learner feedback that is timely, targeted, and immediately useful for learning and teaching? How do you feed back to your learners, so they know you are adapting based on their feedback?

e. How do you stay current with learning and teaching practice? Where do you get support, encouragement, and professional development?

f. What do you know about neuroscience and what strategies make learning stick? Are there any strategies, such as spacing, that you can weave in to help consolidate learning?

g. Do you and your colleagues create time to talk about ako? Is this specifically targeted to your own practice including the demands of your discipline, and the needs of your ākonga? In what specific ways can you improve this aspect of your ako?

## Ngā hau e whā o Tāwhirimātea

— How am I embodying kotahitanga (unity) across all aspects of my teaching - in class, in my informal interactions with students, in assessment, and in feedback?

— How am I collaborating with ākonga to focus on and define the kaupapa of the teaching and learning environment?

— What supports need to be accessed for capability development?

## Phenomenal Educators for Pacific Learners

A phenomenal educator:

— has a love of learning and teaching

— adapts to student needs and welcomes changes

— is warm, accessible, enthusiastic and caring

— works together with other colleagues

# Principle 3

## Ako requires positive interpersonal relationships.

### What does this mean?

Ako, by its very nature, is a reciprocal process and involves the interpersonal relationships between and among kaiako and ākonga. Learning is not something that stands alone as knowledge which is separate from the personal characteristics, experiences, and preferences that kaiako and ākonga bring as people to the learning experience. Appropriate relationships between educator and learner are at the heart of the learning process. Tending to these relationships as an integral part of that process allows the building of trust; development of whanaungatanga (close connections); opportunities for collaboration and dialogue; testing of thinking and theories; reduction of anxiety; building of networks; and collective problem-solving leading to greater participation and active engagement.

Neuroscience tells us that encouraging moderate positive emotions in the learning experience helps learning stick. Far from avoiding the inclusion of emotions, learning processes that include positive relationships, collaboration, and connecting to relevant emotions, are all likely to enhance learning.

Paying attention to relationships in the learning and teaching process creates an environment that acknowledges and includes the whole person – social, emotional, and cognitive as well as physical, cultural, and spiritual. It contributes to an optimal climate for learning that promotes and includes moments for:

- participating in manaakitanga (respect) in an accepting and tolerant environment
- making and celebrating mistakes as integral to the learning process
- exploring differing perspectives, values, and ideals
- connecting to earlier positive experiences
- supporting ākonga to develop greater understanding of complexity and diversity
- developing empathy, resilience, and positive orientations to learning.

### What are the benefits?

In a learning environment where relationships are central, ākonga are assisted to take joint responsibility for their learning and, in the process, develop deeper understanding of their subject and its impact in practice. They feel understood and

safe in their learning processes. Skills in working together are developed through sharing and group activities.

As the learner develops confidence, they move towards becoming more autonomous, having developed positive interpersonal skills for independent work and life.

## What might this look like in practice?

1. Take time at the beginning of the learning process for you and your learners to get to know one another, share some personal information as appropriate, and build relationships and trust that will subsequently enhance the learning experience. Build belonging through whanaungatanga.

2. Create time and opportunities for your ākonga to interact and discuss problems they encounter, learning challenges they face, and a range of positive strategies and solutions to assist learning and understanding.

3. Build a warm learning climate where errors are not only tolerated but welcomed and used as a catalyst for learning, deeper understanding, and reducing anxiety.

4. Nurture networks and collaboration across the cohort and support people to work together in positive ways. Encourage collaborative relationships, peer support, and commitment to self and each other to achieve outcomes.

5. Celebrate, actively value, and support the voices of ākonga who think differently, using this as an opportunity for deepening understanding. Model empathy and openness to a range of perspectives, search for common ground, and promote a synthesis of differing views. Welcome debate.

6. Use strategies and dialogue to transform your authority as an educator, creating impetus for your ākonga to co-develop the learning process. Intervene as needed, while promoting a sense and expectation that ākonga are competent and able to collectively achieve understanding. Don't wait for assessments to be the proof of this – normalise it.

7. Attend to feelings through dialogue and mutual construction of knowledge. Be unafraid to acknowledge inequality and seek ways to discuss and attend to this constructively.

## Questions for consideration

a. When and how do you factor in the establishment of positive relationships in the learning environment? What activities encourage ākonga to connect to positive emotions?

b. How do your ākonga know that their voices and opinions are not only welcome but expected in this learning context? In what ways is this made equitable for all?

c. How do you introduce and nurture concepts of whanaungatanga and manaakitanga?

d. What strategies do you have in your toolkit to ensure sharing, discussion, dialogue, or debate is solution-focused, respectful, honouring of diversity, productive, and leads to enhanced learning and outcomes for all? How do you handle any difficulties that arise?

e. Do you embed culturally responsive pedagogy in your practice? How can it be enhanced? Who can help you? Where can you find out more about it?

f. In what ways can you minimise your authority as a kaiako to reduce your own voice and impact, encourage greater participation by ākonga, and create a platform for improved learning outcomes?

g. How are people's work and life experiences valued as learning opportunities? What ways do you use to enhance positive relationships in the learning environment by exploring the realities of practice?

h. How do you make interpersonal practices visible in assessments? Do ākonga have the opportunities to work together positively and successfully on assessment tasks?

i. Where are your own personal boundaries in terms of relationships in the learning context? Why?

## Ngā hau e whā o Tāwhirimātea

— How am I embodying whanaungatanga across all aspects of my teaching – in class, in my informal interactions with students, in assessment and in feedback?

— How do I want to enhance whanaungatanga in my teaching?

## Phenomenal Educators for Pacific Learners

A phenomenal educator:

— has the ability to develop authentic relationships

— demonstrates respect to students

— creates a sense of belonging in their classroom

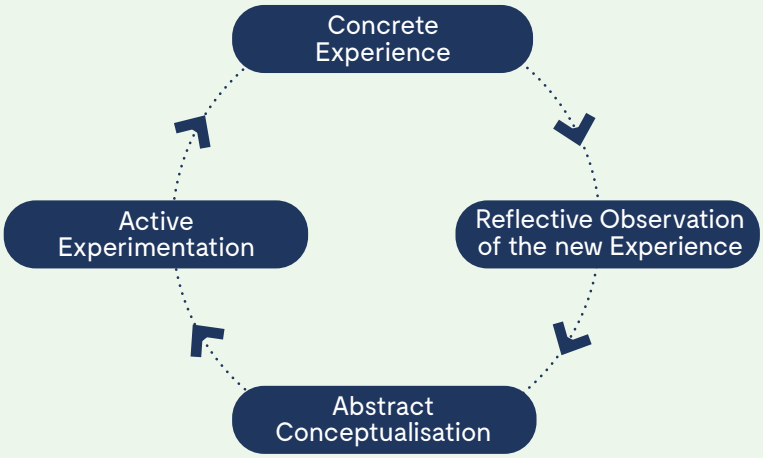
— is warm, accessible, enthusiastic, and caring

# Principle 4

## A focus on experience, and the opportunity to reflect on it, complements and strengthens ako.

### What does this mean?

Kolb's (1984) experiential learning theory informs much subsequent writing about the importance of experience in the learning process. He proposes that learning is best viewed as a process and not merely in terms of outcomes. Kolb's *experiential learning cycle* identifies four interconnected, cyclic processes:




The model views learning as an integrated process and ākonga may enter the cycle at any stage and proceed through the cycle logically – each stage supports and feeds into the next. Experience is insufficient on its own and it is the subsequent processes of reflection, abstract thinking, and experimentation that lead to making deep meaning of the experience. The learning cycle is not complete till ākonga are able to question their thinking, conceptualise new possibilities, and test them out in practice, at which point the cycle continues.

Reflection is at the heart of experiential learning and reflection is more than describing what happened. It requires thinking, analysing, and considering new possibilities as a result. In Kolb's cycle, abstract ideas are included, but should not occur separately from experience, regardless of whether the experience or the abstract conceptualisation comes first.

Learning from experience is about thinking, doing, and being – all of which are integral parts of the learning process as many other writers acknowledge. It assumes learning is an active process with cognitive processes supported by activities that engage learners in practical exercises that allow them to test their thinking in action. Neuroscience suggests learners need time to generate ideas.

There are many different ways to use reflection in learning and teaching, alongside using it in experiential learning, and this is touched on in other principles.

## What are the benefits?

Experiential learning is about getting students involved, providing creative opportunities for learning, and inspiring experimentation. Locating learning in the context of experience honours ākonga and what they bring. It builds on the known and allows each learner to ground and explore their learning in real experiences, activating their prior knowledge and extending from a position of familiarity to more challenging thinking. It uses local, experienced examples as a basis for considering broader theories and concepts.

In essence, the inclusion of experience and reflection allows ākonga to connect new information to pre-existing knowledge and consider ways in which to accommodate it. It also allows for vibrant and challenging discussion when multiple viewpoints and experiences are shared.

## What might this look like in practice?

1. Create an environment in which learning is an active experience. Make it clear that everyone's experience is respected. Perhaps start your introduction to new ākonga with your pepeha (introducing yourself in Māori).

2. Model techniques for activating background knowledge, such as brainstorming, and graphic organisers, like mind maps and KWL charts. Practise activating background knowledge with learners on a regular basis, so they get into the habit of doing this whenever they are presented with new learning or new ideas.

3. Use a variety of materials, media, and resources to promote learning and engagement. Include ākonga experience as a 'text' for consideration in both theory and practice. Include the neuroscience concept of 'generation' to engage ākonga in creating ideas that link to things they know.

4. Encourage genuine sharing of experiences that is accepting of diverse perspectives. Strengthen and support the ability to listen actively, challenge appropriately, and consider new possibilities. Encourage openness to new ways of thinking, doing, and being. Model and promote manaakitanga.

5. Ensure the learning and teaching process is inclusive of a range of approaches, cultural perspectives, capabilities, current issues, real-world practices, and change possibilities.

6. Use group work to promote thinking, brainstorming, problem solving, reflection, and conceptualisation of new ideas. Build it in regularly to allow meaning-making and deconstructing ideas.

7. Build reflection into a broad range of activities in learning and assessment. Assist ākonga to understand the difference between description and critical reflection. Step them gently and logically from low stakes reflection opportunities to those requiring deeper analysis.

8. Wherever possible, create opportunities for authentic practice experiences that move beyond abstract discussions and allow for considering practice implications of learning content. Test ideas, concepts, and beliefs.

## Questions for consideration

a. How do you acknowledge and honour whakapapa? How will your ākonga know this is respected?

b. In what ways do you create opportunities for ākonga to share their experiences that relate to the learning being explored? How do you challenge these appropriately and encourage them to think more critically when required?

c. What opportunities do ākonga have to build on what they know already and expand their thinking? How is this a genuine part of the learning process?

d. Where and how do you build authentic practice experiences into the learning environment? How are these designed to include reflection and conceptualisation of new possibilities?

e. What are the steps you use to help learners to genuinely reflect rather than simply describe experiences that have occurred? How do you build on this to develop deeper levels of reflection?

f. Where does critical reflection occur in your assessment? Do you begin with early, low-stakes examples of this?

g. Do you balance the inclusion of your own experience and reflection with that of ākonga? Are there ways in which you can improve the balance? Do you model reflective practice with your learners? Do you offer opportunities for reflecting collaboratively on the learning experience?

h. Where do you factor in 'active experimentation' so that ideas can be tested and refined?

## Ngā hau e whā o Tāwhirimātea

— What did my students teach me about this concept/topic/activity? How do I want to enhance whanaungatanga in my teaching?

— How do I allow students to explain where they are from – show them that their lived experiences are connected to what they will learn?

— How do I model and show students how to self-evaluate?

## Phenomenal Educators for Pacific Learners

A phenomenal educator:

— knows when to listen to students

— is reflective

— is adaptable

# Principle 5

## Ako is enhanced when there is clear alignment between intended learning outcomes, learning and teaching activities, and assessment.

### What does this mean?

*Constructive alignment* is the term used to describe the alignment between three core components of the learning process: intended learning outcomes (ILO); teaching and learning activities (TLA); and assessment tasks and activities. The 'constructive' refers to what students learn, while the 'alignment' component is about these three core components and their interrelationships.

Learning outcomes may cover acquiring and developing new knowledge and understanding and progressing skills and attitudes which relate to the learning. At the end of a course of learning ākonga might need to be able to explain a concept, demonstrate a skill, or explain why a certain course of action or way of thinking is important.

Note that what is described are 'intended' learning outcomes. If we see learning as a complex process and one that has many variables, is fluid and must accommodate unexpected happenings, fixed outcomes might not honour the learning process that occurs in the moment. However, having intended outcomes helps both ngā aiako and ngā ākonga have some clear expectations about what the focus of the learning process is. Sharing the outcomes creates the ability to adapt as required to ensure that the learning targets the specific needs of ākonga. ILO can be large as in course objectives, or more targeted and specific as in the learning outcomes for a particular session.

Once the outcomes are established, the TLA are planned and structured so they will assist ākonga in achieving the ILO. It is particularly important to be clear about the verbs used in the outcomes. If the verb says, for example, 'design', the activities should allow ākonga to participate in creation or design processes. If the verb says 'use' then they need to use the relevant equipment, model, or process as part of their learning activities. These activities should be structured so that they enhance the learning process and lead to understanding, meaning making, or skill development.

This alignment extends to assessment tasks or activities, where again the verb is carried through, whether it be formative (to test understanding but not count towards final grades) or summative (final course) assessment. When formative assessment is used, it can become one of the TLA if aiako monitor learning, provide feedback, and adjust accordingly if learners are having difficulty. As with the TLA,

it is important to ensure the assessment tasks require the thinking or practice capabilities specified in outcomes. A summative assessment that requires learners to 'describe' would be inappropriate if the verb in the ILO specified that they must 'create'.

Caution must be taken to avoid there being a single fixed outcome of the learning process or one type of formal knowledge to be attained. Ākonga will flourish if they learn to see knowledge as contextualised and fluid and be able to adapt accordingly in learning and in practice.

## What are the benefits?

While learning must be viewed as a process and not as merely meeting specified outcomes, having clarity on the intended outcomes makes the learning process much more visible to all. If ākonga have a clear understanding of the intended outcome it allows them to focus more fully on their learning and use the TLA to measure their own progress towards its achievement. When enacted well, constructive alignment leaves no real surprises when it comes to assessment. Not knowing what is expected can be unsettling, knowing provides certainty.

## What might this look like in practice?

1. Take particular care in writing course learning objectives or outcomes and aligning them to the summative assessment tasks. Focus particularly on the verbs used. Ensure that the assessment tasks are structured to specifically assess the intended outcomes.

2. Where appropriate, confirm intended learning outcomes with qualification writers.

3. Ensure there is a balance between content and the process of learning. Too much content compromises the ability of ākonga to engage with the material, interpret it, and make meaning. Balance minimises anxiety and stress.

4. From the beginning of the learning process, clearly identify what is expected of ākonga or what the learning involves and provide opportunities to clarify. Identify opportunities for co-constructing learning outcomes with learners, where appropriate.

5. Ensure your ākonga feel comfortable to participate fully in the learning process, use it as a means to monitor themselves against the ILO, and have some agency and autonomy over their own progress.

6. Revisit, so that ākonga understand the ILO and their relationship to the TLA. Make this visible and continually reinforce it.

7. Get creative and engaging with your TLA to make them relevant, motivating, and helpful for progressing learning. Where relevant, engage with learning designers to ensure there is agreement on intended outcomes. Use collaborative learning activities as much as possible within the constraints of your learning context. Eliminate long periods of listening in favour of a mix of close attention and then engagement.

8. Avoid adhering to the ILO at the cost of spontaneous learning opportunities. Adapt, pivot, cycle back, or stop to reinforce when it is clear that your ākonga need further assistance or are struggling with a concept or skill.

9. Summarise at the end of sessions so that everyone knows where they have got to and what needs to happen next. Implement moments of reflection or 'stocktake' opportunities that help both you and ākonga focus on future TLA experiences. Revise regularly to consolidate learning.

10. Embed early, low-stakes assessment tasks to assist in both learning and self-monitoring progress. Use formative assessment as a learning process regularly so ākonga can assess themselves and each other and you can adapt as needed.

## Questions for consideration

a. What do you do to nurture manaakitanga to ensure ākonga feel comfortable and confident to participate, identify challenges or uncertainties, and take agency over their own learning?

b. Do you make learning intentions and success criteria clear, evident, and linked to assessment tasks? In what ways do you make these visible to your ākonga?

c. When and how do you communicate appropriate high expectations and demonstrate a strong commitment to ākonga and their learning? What do you do to validate their success?

d. What options are there to enhance learning and achievement through 'thrill, will, and skill' goals (Hattie & O'Donoghue, 2018) – motivation, learning dispositions, and achievement?

e. How do you use both surface learning and deep learning to help ākonga understand and make meaning of concepts and begin the process of transferring them to multiple contexts? How do you decide on the balance of surface learning and deep learning, remembering that deep learning is the ultimate goal?

f. What strategies do you have to utilise student-generated questions to deepen and extend their learning?

g. When is it appropriate to introduce the uncertain, the complex, the troubling, and the contentious? How can you do this safely and effectively to enhance learning and understanding? What do you do to minimise conflicts of perspective and maximise positive emotions?

## Ngā hau e whā o Tāwhirimātea

— How do I use group-learning tasks and assessments, and train ākonga how to work supportively?

— How do I model and show students how to self-evaluate?

## Phenomenal Educators for Pacific Learners

A phenomenal educator:

— has clear objectives

— has a sense of purpose and knows about motivation

— uses authentic praise

# Principle 6

## Shared high expectations and challenging tasks are motivations for growth and development.

### What does this mean?

A recurring theme throughout the literature indicates that kaiako having appropriate high expectations for ākonga contributes to their growth and development. Combining high expectations with associated challenging tasks is a powerful combination that is proven to enhance learning, as long as the challenge and expectation is consistent with the student capability to deal with it – a fine balancing act.

Russell Bishop's work over many years established some sound principles on which this topic can be explored. He notes the power of having high expectations and continually voicing these in the learning process. If ākonga experience learning environments where they are seen to be deficient or unable to achieve to expected levels, their learning behaviours respond accordingly, a situation called a 'self-fulfilling prophecy' by Hattie (2009, p. 35). Conversely, if their kaiako set appropriately high expectations and support ākonga to achieve, evidence suggests standards and outcomes improve. The key to such an approach is not only in the stating of high expectations, but also in the support and 'scaffolding' that is provided to achieve success in the associated tasks.

Educators having high expectations and actively negotiating success criteria with learners, leads to those learners developing self-belief and engaging in self-evaluation to determine their progress against established criteria. This is part of 'visible' teaching and learning where learners know what to expect, know the goal, and increasingly know how to get there. Hattie says this 'requires teachers to have high respect for their students and to show a passion that all can indeed attain success' (2012, p. 26).

These factors are equally relevant in tertiary settings and are front of mind for many authors who note the importance of personal commitment, attitude, and motivation as factors that lead to enhanced learning. Education is about personal and intellectual growth and including ākonga actively in educational processes, assisting them to understand the agency they have over their learning, and providing appropriate support within the learning and assessment process, lays the groundwork for improved outcomes.

This requires skill, insight, and persistence on the part of kaiako to make all elements of the learning and assessment process clear, and to make visible the goals and practices that are designed to assist with successful learning and

outcomes. It requires very deliberate practice. It also requires Kaiako to address any misconceptions they might have of ākonga engagement and achievement and consider the challenges of the context.

## What are the benefits?

Evidence suggests that practices that encourage intellectual challenge, within appropriate goals and with targeted support, help learners in a range of ways. These include assisting them to confront misconceptions and foster effort, engage more deeply, feel intrinsically motivated to do their best work, develop evaluation and critical thinking skills, and focus on depth of learning rather than on processes that result in surface learning.

## What might this look like in practice?

1. Know your ākonga, who they are, what experience they have had, and what will be required to help them achieve success in the learning process.
2. Make the demands and expectations of the learning process and outcomes highly visible and revisit this often to help your ākonga set their own goals and structure their learning.
3. Before every learning and teaching experience, be clear about how the learning and teaching activities will assist your ākonga in progressing their learning and understanding.
4. Use practices that move your ākonga from a position of spectator to active participation. Challenge them to apply their learning in active ways, even when it is formative.
5. Consider your ākonga as partners in the learning experience. Encourage them to actively participate in the process, evaluate it, provide feedback, and adapt their own practices to make learning more effective. Provide the support they need to do this.
6. Build an appetite for more, new, and enhanced learning by ensuring ongoing success in the learning and assessment processes.
7. Address misconceptions that lead to misunderstandings or faulty thinking. Always do this in mana-enhancing ways that do not destabilise or shame your ākonga, but rather encourage them to reframe their thinking and understanding.
8. Ensure you consider learner wellbeing alongside high expectations and create achievable steps to learning success.

9. Evaluate, evaluate, evaluate. Then adapt as required to promote progress for your ākonga towards achievement of goals and expectations.

## Questions for consideration

a. How does your own experience and identity as an educator determine how you view learners and what they are capable of? How does it influence your practice? Are there ways for you to reframe any elements of this?

b. What strategies do you use to find out what your ākonga are, or might be, capable of? How can you find out more?

c. In what ways can you make visible not only your expectations of what they will learn, but also the role of learning, teaching, and assessment activities to support progress towards these?

d. What practices can you use to achieve a balance between high expectations and current capability? In what manageable ways can you step learners through challenge to success? How do you celebrate your learners' success?

e. What processes do you use regularly to determine progress towards successful outcomes? How do you use this to adapt practice?

f. How do you avoid content overload and allow deeper learning and understanding to occur?

g. What do you do to safely introduce ākonga to content or practices that challenge their current thinking? What mana-enhancing practices can you use?

h. Who are your partners in assisting your ākonga to achieve high expectations?

i. What professional learning and development might you engage in to become more confident and skilled at setting appropriate high expectations and supporting ākonga to achieve them?

## Ngā hau e whā o Tāwhirimātea

— How do you communicate with empathy?

— How do you allow students to explain where they are from – show them that their lived experiences are connected to what they will learn?

— How do you uphold the mana of all participants?

## Phenomenal Educators for Pacific Learners

A phenomenal educator:

— sets high expectations for all students

— has a sense of purpose and knows about motivation

— knows when to listen to students

— adapts to student needs, welcomes changes, and can take risks

## Summary

These six principles are not the complete picture of tertiary learning and teaching, which, as explained, is complex. They are a starting point for considering your practice and thinking about ways in which it can be adapted to ensure a more inclusive, responsive, and ultimately successful learning experience for your ākonga.

Remember also, as is evident in the practices and questions, that the principles are connected and inter-related, just as the learning process itself is. Attending to practice in one area is likely to pay dividends in another.

As presented, these principles are generic, with most being universally applicable and some requiring adaptation for specific contexts. Kaiako in a range of learning contexts should use the questions for consideration as opportunities to test and adapt practices for their own ākonga and learning settings.

Educators and teams are encouraged to engage with the principles and their associated practices and questions as part of ongoing professional learning and development. This is essentially talking about learning and teaching and how to challenge and improve it, based on evidence-based approaches. Wherever possible, work with experienced colleagues and facilitators to unpack the ideas within your own context and identify ways to enhance the quality of the learning process and the subsequent outcomes.

Start small. Find ways that feel appropriate in your context, perhaps because you can identify existing challenges where you would like to make improvements. What are your ākonga stumbling over? Where and why are they disengaged? What are you not enjoying or finding success in with your practice? Each small adaptation makes a difference and ākonga generally appreciate it. Explain what you are doing to them and why. Seek their feedback. After all, ako is a reciprocal process.

Talk to Ako Aotearoa about professional learning and development opportunities available that assist with developing capability in these areas.

In the section that follows, the literature that was analysed to create this synthesis is summarised.

# 3 What the literature and evidence tells us

In this section a wide range of publications are briefly reviewed to glean key understandings of what impacts tertiary learning and teaching in positive ways. It is this literature that led to the development of the principles, practices, and questions for consideration.

This is not exhaustive. Any review involves making decisions about what is included. This one begins with reviewing some of the foundations of tertiary learning and teaching that continue to influence our understanding of how ākonga learn. While extending back over the late 20th century, this core information still forms the basis of more contemporary understandings of tertiary learning and teaching, though elements of it are often unpacked and reinterpreted. For example, the synthesis touches on emerging literatures that focus on non-Western pedagogies and factors that impact diverse communities and learners, information that is providing new insights into tertiary learning and teaching.

This is followed by reviewing key work from the compulsory sector that provides valuable insights and contributes to our knowledge of what works for young people, while adding value to learning for all.

The third section provides an overview of success factors for Māori and Pacific learners through reviewing selected and influential authors focusing on a range of contexts.

The review concludes by taking an overview of flexible and digital learning, hauora and wellbeing, and the emerging evidence from neuroscience that provides valuable practical guidance for kaiako.

Collectively these provide strong guidance on ways to enhance the learning and teaching process, whatever the context. However, for further context-specific considerations, there are references in the bibliography.

# 4 Some seminal works

This section briefly touches on some of the authors whose work has been highly influential over recent decades in considering what teaching in tertiary education looks like from a Western perspective. This synthesis does not aim nor claim to be exhaustive. Each author's work is only briefly reviewed here as an indication of key components of their learning theory and practice.

> Teaching and learning are such complex processes, and teachers and learners are such complex beings, that no model of practice or pedagogical approach will apply in all settings. A lot of fruitless time and energy can be spent trying to find the holy grail of pedagogy, the one way to instructional enlightenment. No philosophy, theory, or theorist can possibly capture the idiosyncratic reality of your own experience as a teacher (Brookfield, 1990, p. 197).

**Brookfield (1990)**, writing about *The Skillful Teacher,* deftly describes the messiness and intricacy of the learning and teaching process and his warning will resonate with many, regardless of learning context, although there are no absolutes. There is, however, a range of indicators of effective practice that emerges from a broad literature that can assist those involved in educational practice with tertiary learners.

Brookfield, while noting the complexity, also sees teaching as a 'passionate experience'. He warns that 'teachers who care passionately about their practice can easily become obsessed with the role model of the exemplary' (p. 7) rather than focusing on how well students are learning. He urges educators to be responsive to learners and adjust teaching accordingly to cater for the realities of the context and how students are experiencing their learning. One of his flagship strategies to enhance responsiveness is the 'critical incident report' where learners regularly report briefly on their experiences of learning with the primary purpose of the educator analysing and responding to these. These stand separately from standard student evaluation questionnaires implemented at the end of a course and are intended to evaluate and shape practice as it proceeds.

Challenge in learning is another key theme for Brookfield and he notes that, when learners are asked to speak about significant learning moments, 'it is interesting how many students speak of episodes in which challenge was the central theme … events and occasions when they were faced with difficult situations or with dilemmas that had no clear resolution' (p. 48). This is a familiar theme for other writers included here and elsewhere (e.g., Csikszentmihalyi, 1985). Caution is expressed by many to ensure that the challenge is congruent with the skill of the learner, resulting in high motivation, as compared to a mismatch with resulting high anxiety. Educators might benefit from looking at the notion of *threshold concepts* (Meyer & Land, 2003) to see what happens when learners confront troublesome knowledge and what educators can do about it to help learners engage with and make meaning of these difficult concepts.

There is much more of interest in Brookfield's work, and one other issue to highlight is the centrality of reflection and the time needed to build learner capability with this process, a topic he expands on in his subsequent book *Becoming a Critically Reflective Teacher* (1995). Here he promotes the establishment of a culture of critical reflection, a theme discussed by most writers in this synthesis. He challenges educators to avoid breadth over depth, leaving students without time or tools to reflect critically on knowledge or experiences. This leads logically to looking at Kolb's approach to experience and reflection, given that Brookfield is concerned about the balance between them.

**Kolb's** (1984) experiential learning theory informs much subsequent writing about the importance of experience in the learning process. Kolb proposes that learning is best viewed as a process rather than just in terms of outcomes. His *experiential learning cycle* identifies four interconnected, cyclic processes: concrete experience; reflective observation; abstract conceptualisation; and, active experimentation.

The model views learning as an integrated process where learners enter the cycle at any stage and proceed through the cycle logically with each stage informing the next.

Reflective observation is at the heart of Kolb's cycle and this reflection requires thinking, analysing, and considering new possibilities as a result. In Kolb's cycle, abstract ideas are included, but should not occur separately from experience, regardless of whether the experience or the abstract conceptualisation comes first.

Of course, Kolb's work entails much more than the cycle itself and other considerations for experiential learning include:

— Attention to learning as a continuous process and not simply as specific and fixed outcomes.

— Learning entails constant tensions and making meaning through navigating these tensions and different ways of thinking leads to higher levels of understanding.

— Learning is a highly adaptive process and the process of experiential learning, when enacted well, assists in learners developing skills and capability to adapt. This includes learning to adapt to environments.

— Learning is ultimately the process of *creating* knowledge.

In summary, Kolb notes that 'learning is the process whereby knowledge is created through the transformation of experience' (p. 38).

As with many theories, there is some critique of Kolb's theory, particularly in relation to the sequencing of the steps in the cycle, with some writers noting that these are not necessarily discrete or may occur simultaneously. Some argue the cycle should contain 'critique' as a key element beyond reflection. Nonetheless, there remains value in considering the theory and its relationship to making meaning from experience.

**Biggs**, another foundational and prolific writer with a focus on university teaching, notes that learning and teaching and the constructive alignment of elements of them, remain pivotal in considering tertiary teaching. While he was publishing relevant material in the 1980s, his work remains current and, with his collaborator Catherine Tang, he published a 5th edition of his key work *Teaching for Quality Learning at University* in late 2022.

In the fourth edition published in 2011, Biggs and Tang note that there have been dramatic changes to the nature of university teaching since 2000, including growing participation rates, the increasing diversity of students and an evolving focus on professional and vocational learning. These necessitate changing approaches to learning and teaching.

Biggs has written for many years on constructive alignment which, he says:

> 'differs from other forms of outcomes-based teaching and learning in that teaching is also addressed, in order to increase the likelihood of most students achieving those outcomes. In constructive alignment we systematically align the teaching/learning activities, as well as the assessment tasks, to the intended learning outcomes. This is done by requiring the students to engage the *learning activities* required in the outcomes. Talking about the topic, as in traditional teaching, rarely does that directly as lecturing requires the students minimally to listen and to take notes' (Biggs & Tang, 2011, p. 12).

At the heart of this work is a need to focus not on what the student is, nor what the educator does, but on what the *student* does, and it is this latter factor which provides insights into how learning and teaching in tertiary education can be enhanced. This approach is student-centred and promotes practices that are focused on how and what students learn (the constructive component). This requires educators to be clear about what the intended outcomes of learning are and what this means for helping learners to truly understand these and the related content (the alignment component). Learning and teaching activities and associated assessments are designed specifically to attend to these issues of understanding and to assist learners to 'experience a felt need to achieve the outcome' (p. 23).

Biggs and Tang include the issue of deep and surface learning which is central to how many writers consider approaches to learning, not least of all Ramsden.

**Ramsden**, specifically focusing on higher education, makes very explicit links between students' learning and the quality of teaching. Like others, he defines the nature of good teaching as that which 'encourages high-quality student learning' (Ramsden, 2003, p. 84).

Ramsden outlines six principles which he contends will make a difference to student learning. These are:

— *Interest and explanation* – ensure the material arouses interest and is explained in a way that will be of value or applied later.

— *Concern and respect for students and learning* – be generous, honest and interested in their teaching, versatile and available to students.

— *Appropriate assessment and feedback* – the availability of the teacher to students to assist them in developing strategies to provide evidence of their understanding.

— *Clear goals and intellectual challenge* – achieving a balance between freedom and discipline such that the student is able to progress their learning positively.

— *Independence, control, and engagement* – 'High-quality teaching implies recognising that students must be engaged with the content of the learning tasks in a way that is likely to enable them to reach understanding' (p. 97).

— *Learning from students* – Ramsden's 'single most important message' (p. 58). The other principles count for little, he says, if teachers don't assess the impact on students and adjust teaching accordingly.

The foundation stone of this approach is a distinction between surface and deep approaches to learning, originally attributed to Marton and Säljö (1984). The former, Ramsden contends, results in students intending only to complete the task at

hand whereas the latter predisposes an intention to understand. It is the way the educator goes about teaching that creates the appropriate orientation to learning. The key concept associated with the deep approach is engagement such that the student wishes to understand and make meaning rather than take a reproduction orientation to satisfy the teacher's assessment demands. Ramsden (p. 53) proposes that '*What* students learn is indeed closely associated with *how* they go about learning it' and, correspondingly, how much satisfaction students derive from their learning.

This issue of surface and deep learning permeates the literature, and many writers refer to it, generally favouring deep over surface learning. However, Hattie (2009, p. 28) makes an important observation.

> There needs to be a major shift … from an over reliance on surface information (the first world) and a misplaced assumption that the goal of education is deep understanding or development of thinking skills (the second world), towards a balance of surface and deep learning leading to students more successfully constructing defensible theories of knowing and reality (the third world).

So, the binary distinction between surface and deep learning is insufficient and Hattie argues that all three types of learning are critical to achieve optimal outcomes, and a skilful educator will use all three types of learning appropriately to assist in the learning process. Surface learning lays the groundwork for making meaning and learners are unlikely to thrive if they are thrust into deep learning challenges before they have understood the basics. And Hattie's 'third world' is where the learner is able to transfer deep understandings into broader contexts of practice. Barnett, too, considers these types of learning through an alternate lens of learning 'modes'.

**Barnett** (2004) reflects very differently on the issues raised by Biggs and Tang in relation to the changing nature of tertiary education. He focuses on learning in and for the uncertainty in our increasingly complex world. This uncertainty relates, amongst other factors, to the sheer amount of information to be considered and the corresponding destabilising effect on learners as they try to cope with this. He contends that the skills focus inherent in some educational approaches is insufficient and learning for an unknown future should be 'understood neither in terms of knowledge or skills but of human qualities and dispositions' (p. 247).

For Barnett, this means that learning must not assume that there is a single formal and universal knowledge to be attained (mode 1 knowledge). Nor is it enough to stop at practice-based learning where the goal is problem-solving in situ (mode 2 knowledge). Rather Barnett contends that learning must be a process that assists learners to live, work, create, and prosper with uncertainty (mode 3 knowledge). While acknowledging that it is a high-risk endeavour, Barnett makes a case for

educational transformation of the human being where the curriculum and pedagogy are purposefully designed to expose learners to dilemmas and uncertainties. He notes that this kind of learning and teaching calls for imagination and risk that entails both the learner and educator and requires careful application. He suggests that, as a result, there are rewards to be achieved, including the development of creativity and dispositions such as 'carefulness, thoughtfulness, humility, criticality, receptiveness, resilience, courage and stillness' (p. 258).

There are synergies here with Brookfield's contention that learners prefer experiences where challenge and dilemmas offer opportunities for significant learning, assuming the issues of relevant skill levels are considered. As already identified, a balance must be achieved. Too much uncertainty may undermine student self-efficacy and motivation.

**Prosser and Trigwell** (1999) focus on *Understanding Learning and Teaching, again in the higher education context. They acknowledge the broadly diverse expe*riences that students bring to the learning situation and the corresponding challenge for educators to attend to the variations in student learning. Referencing the work of many other writers discussed here, they describe teaching from a 'relational perspective' where 'students' perceptions of their learning situation evoke prior learning experiences that relate to their learning approach and their learning outcome' (p. 8). They argue that it is incumbent on educators to understand how these different prior experiences, combined with student perception of their current situation and their learning approaches, influence how learners attend to their learning and what outcomes they achieve.

This is confirmation of the complexity of the learning and teaching process. Prosser and Trigwell unpack how educators also experience the process of learning and teaching and that there are comparable factors and variations in their experience and practice.

After a comprehensive analysis of these factors, Prosser and Trigwell outline a series of principles of practice for good teaching. They describe these as involving 'a continuous awareness:

— of students' present learning situations;

— of the contextually dependent nature of teaching;

— of students' perceptions of teaching technologies (including information technology) used in teaching;

— of the student diversity (including cultural diversity) in classrooms; and

— of the need to continually evaluate and improve teaching' (p. 166).

In outlining these principles, they reference several of the writers included here and urge educators to note the importance of Ramsden's number one principle of learning from students. Good teaching, they conclude, 'is about a continuous process of looking at the learning and teaching situations from the perspective of the student and adjusting the teaching in light of this continuous monitoring' (p. 168).

The transformation of the learner is a theme appearing in the writing of many authors outlined here. **Mezirow** is one of key writers in relation to transformative learning and, while he began conceptualising his theory in 1978, it underwent ongoing revision for many years.

In essence, transformative learning is 'defined as the process by which we transform problematic frames of reference (mindsets, habits of mind, meaning perspectives … to make them more inclusive, discriminating, open, reflective and emotionally able to change)' (Mezirow, 2018, p. 116).

This theory is based on a number of phases that learners go through in the process of making sense of their world and their experiences. Adults, Mezirow contends, seek to make meaning of their experiences, and have a sense of themselves (and others) as capable of thoughtful and responsible action. They have the capacity to learn over time, to interpret and challenge experiences, beliefs, and understandings and engage in reflective thinking to test and assess assumptions. In the process, they can engage productively and openly with others and consider alternatives, but this requires them to build competence and confidence in taking on new roles and understandings. Ultimately, they are able to imagine how things could be different.

The catalyst for transformative learning is 'a disorienting dilemma' – something that challenges the learner's status quo and creates an impetus for rethinking beliefs and understandings. The process of creating and subsequently assisting learners through such processes requires careful handling by educators, as learners confront issues and beliefs that may be central to their understanding of self. To facilitate transformation, 'educators must help learners become aware and critical of their own and others' assumptions' (Mezirow, 1997, p. 10). They will need practice and safe environments to consider new perspectives and engage effectively with developing new understandings. This is best achieved through enacting learning as a social process where new meanings are made through engagement with different perspectives.

These are challenging approaches to teaching, but Mezirow outlines some of the practices that can assist in creating these moments for transformation.

> Education that fosters critically reflective thought, imaginative problem posing, and discourse is learner-centered, participatory, and interactive, and it involves group deliberation and group problem solving. Instructional materials reflect the real-life experiences of the learners and are designed

> to foster participation in small-group discussion to assess reasons, examine evidence, and arrive at a reflective judgment. Learning takes place through discovery and the imaginative use of metaphors to solve and redefine problems (Mezirow, 1997, p. 10).

With such a pedagogy, learning can move well beyond the development of knowledge, or even skills, and attend to the learner's attitudes, identity, and even, being, as described by Barnett above.

## Broadening the discussion

These writers by no means provide a comprehensive coverage of the literature relating to adult learning, not least of all because they represent a dominant Western perspective. However, they contribute to an overview of some of the key conceptions of learning that have influenced the development of contemporary approaches to tertiary education and remain central. These approaches include, but are not limited, to student-centred learning, social constructivism, self-directed learning, inquiry-based learning, project-based learning, action learning, social constructionism, and more.

Merriam (2017, p. 33) provides a succinct summary of the situation. In mirroring the opening paragraph of the introduction and the voices of some of the writers covered in this summary, it is clear, she says, 'that there is no one theory or set of principles that can capture the full range of what we know about adult learning. Rather what we have is an expanding mosaic of theories, models, principles, and insights that together make up what we know about adult learning at any one point in time'.

She notes, as indicated here, that recent theories of adult learning focus on more holistic conceptions that expand beyond the cognitive domain and encompass mind, body, and spirit. She also reminds us that 'these holistic conceptions merge well with our increasing understanding of non-Western perspectives on learning and knowing. Non-western views of learning emphasise the communal nature of learning, its lifelong and informal nature and the fact that learning is also more than just a cognitive process. (p. 34).

Merriam's comment reminds us to consider emerging notions of learning and teaching, including assessment, that build on these theories and introduce new considerations. For example, Tai, Ajjawi, Boud, and St Jorre (2022) note that 'it is critical to value the complete range of characteristics that apply to diversity of learners, including in assessment' (p. 9). At the heart of their concern is the wide range of life experiences and opportunities that learners come with and acknowledging that learning difficulties or differences should not be viewed as the 'problem' of the learner. Tai et al. urge educators to consider the 'disparity in experience and opportunity that students have in present-day assessment, and

then shift to better assessment systems, designs, and processes that do have inclusion in mind' (p. 10).

The same is clearly true for learning and teaching processes and these issues are teased out further with specific reference to Māori and Pacific learners below. This is just the start and Universal Design for Learning (UDL) (and assessment) principles and practices (see Meyer, Rose, and Gordon, 2014) should be considered in terms of enhancing inclusion and success.

It is also important to consider further developing insights such as those pertaining specifically to the vocational sector (see Cedefop, 2015, and Lucas, 2014 in the bibliography) where emerging practices for learning and teaching are appearing more regularly. Analysis of these suggests that many of the principles outlined here remain intrinsic but the specifics of practice may look different. Some elements of this are woven into this synthesis but more work needs to be done to determine how the principles and practices outlined here are interpreted and implemented in a range of contexts, including in vocational education.

There is no single solution to what counts as effective learning and teaching for all ākonga, but there are many invaluable insights into how these can be done better.

## Concluding comment

As is evidenced through this necessarily limited coverage of perspectives on education with adults, self-directed learners who have a better understanding of what and why they are learning will cope better with the information overload that impacts everyday life and learning. Learning in authentic contexts such as through experiential and work-based learning helps maximise the learning process and outcomes. Critical thinking achieved through experience and reflection helps foster the capability to examine issues such as inequity, systems of power, and access to learning. Social learning offers opportunities to assist learners to engage and learn in a range of social contexts that help them in developing greater understanding and meaning.

In conclusion, as Merriam (2017, p. 35) says 'the more we know about how adults learn, the better we can design learning activities that facilitate learning and the better we can prepare adults to live full and engaging lives in today's world'. Tertiary education has potential to achieve such results when the learning and teaching process attends to the complexities of context and the diversity of learners.

# 5 Insights from the schooling sector

As outlined earlier, valuable information can be gleaned from looking to the compulsory sector, which is served with an expansive literature and, in particularly, two meta-analyses of evidence-based teaching, the *Great Teaching Toolkit* (Coe et al., 2019), and *Visible Teaching* (Hattie, 2009). Each of these analyses includes huge datasets and a strong focus on empirical research with evidence of learner outcomes.

## The Great Teaching Toolkit – Evidence-based Education

The authors of the tool kit aim to help teachers make better decisions about what they can best do to improve their effectiveness. In order to do this they 'have reviewed existing research studies and frameworks that are relevant to the components and routes to improvement of teacher effectiveness' (p. 5).

Like several of the seminal writers discussing tertiary teaching, Coe et al. assert that 'a great teacher is one whose students learn more'. They too note that teaching 'cannot be defined by compliance to a particular set of practices, however soundly based, nor by the demonstration of specific skills – nor, even, by the possession of particular teacher mindsets or understandings. Teaching is complex' (p. 10). There is convergence with those writing from a tertiary education perspective who also note this complexity.

In trying to come to an understanding of what great teaching looks like, Coe et al. (p. 13) acknowledge that 'instead of a clear, comprehensive and reliable model of great teaching, research gives us partial insights, often contradictory or confusing, much of it based on weak correlations between ill-defined teacher behaviours and rather impoverished measures of student learning'. This reinforces the challenges of attempting to come to a single definitive understanding of, or specific set of practices for, great teaching.

Notwithstanding the challenges, Coe et al. identify four priorities for educators who want to help their students learn more:

1. ‘understand the content they are teaching and how it is learnt;
2. create a supportive environment for learning;
3. manage the classroom to maximise the opportunity to learn;
4. present content, activities and interactions that activate their students’ thinking’ (p. 5).

They comment on the first priority, noting that content knowledge is not one of the observable classroom behaviours which impact student learning – it focuses on knowledge rather than educator behaviour and the former does not necessarily influence learner outcomes. The significant part of the statement is ‘how it is learnt’ as that focuses on the relationship between the teacher and the learner. The teacher needs to have command of the content in order to teach it to the learner. Hattie too is cautious about untested assumptions about the value of content knowledge. While they go on to make an argument for the inclusion of content knowledge, this is not explored in depth in this work where the focus is strongly on elements of teaching, learning, and assessment practice and not on discipline or content knowledge. The best economist does not necessarily make the best economics educator.

Each of the priorities outlined above is unpacked in expansive detail in the *Great Teaching Toolkit* evidence review which covers many of the principles and practices that lead to students being better engaged in their own learning and, therefore, more likely to be successful in and beyond the schooling context. Those priorities related to a supportive environment and good class management coalesce with the tertiary education literature, although the contexts of school and tertiary education are often very different. They include factors that have become familiar such as relationship building; respect; inclusion of diversity; motivation; culture of high expectations; and the importance of consequences for inappropriate behaviour.

In relation to activating hard thinking, the authors attach this to practices such as clarity of learning outcomes; scaffolding and supporting the development of thinking; concise and clear explanations; experiential learning; the use of questions and dialogue; and high-quality assessment that builds on previous learning. These align with the references to deep, reflective, and challenging learning experiences arising from the analyses of many other writers in the tertiary context.

Key elements from the proposals of the *Great Teaching Toolkit* were included in the mapping process of this document and are also woven into the learning and teaching principles and indicative practices. It is a resource well worth reading for educators wishing to improve their teaching with evidence-based practice.

## Visible Teaching – John Hattie

While this synthesis focuses specifically on Hattie's 2009 seminal work - *Visible Teaching* – his later work, *Visible Learning for Teachers* (2012), is one of the core pieces of research in the Great Teaching Toolkit evidence review. It is equally important to note that there have been critiques of Hattie's statistical analysis (see Bergeron and Rivard (2017), for example), but the core of his conclusions remain relevant and this and subsequent work by Hattie are still considered highly valuable.

Hattie's work is the culmination of 15 years of research and includes over 800 meta-analyses covering more than 50,000 studies related to achievement in school-based learning. The scope of Hattie's research is well beyond what is included here but suffice to say, a core message is that what teachers *do* matters. Hattie qualifies this by noting that it is what *some* teachers do that influences learning, especially those who teach in a deliberate and visible manner. 'When these professionals see learning occurring or not occurring, they intervene in calculated and meaningful ways to alter the direction of learning to attain various shared, specific, and challenging goals. In particular, they provide students with multiple opportunities and alternatives' (p. 22).

Like others, Hattie notes that there is no deep secret called 'teaching and learning' but rather that both learning and teaching require skill and knowledge by both educator and student.

> 'The teacher must know when learning is correct or incorrect; learn when to experiment and learn from the experience; learn to monitor, seek and give feedback; and know to try alternative learning strategies when others do not work. What is most important is that teaching is visible to the student, and that the learning is visible to the teacher. The more the student becomes the teacher and the more the teacher becomes the learner, then the more successful are the outcomes' (p. 25).

This final sentence references Ako – the reciprocal relationship between learning and teaching, the critical role it plays in successful learner outcomes, and its centrality in this synthesis.

Hattie outlines several aspects of teaching that are associated with learning including:

— 'paying deliberate attention to learning intentions and success criteria;

— setting challenging tasks;

— providing multiple opportunities for deliberative practice;

— knowing when one (teacher and student) is successful in attaining these goals;

— understanding the critical role of teaching appropriate learning strategies;

— planning and talking about teaching;

— ensuring the teacher constantly seeks feedback information as to the success of his or her teaching on the students' (p. 36).

His central premise is that when learning is visible there is a greater likelihood of students reaching higher levels of achievement, and that one of the highest impact factors is the relationships between educators and learners. When student-centred teaching occurs 'there is more engagement, more respect of self and others, there are fewer resistant behaviours, there is greater non-directivity (student initiated and student-regulated activities), and there are higher achievement outcomes' (p. 119).

Revisiting *Visible Teaching* in 2023, Hattie reconsiders some of the material in his earlier work, and while he doesn't resile from many of the strategies he proposed, he notes that these alone do not make you an expert teacher. In his new book, he wants to move past a strategy focus to a more holistic approach to learning and teaching. 'We need to shift from focusing on the impact of talking to focusing on the power of listening' (2023). He notes that what is really important is the evaluative decisions that teachers make in the moment. This entails more thinking aloud, more dialogue, and more understanding about the impact on student learning. In short, think, evaluate, and adapt to enhance learning rather than doggedly adhering to specific strategies. And do all this with the learner's perspective fully in mind.

## Te Kotahitanga

While not a meta-analysis in the same sense as the two school-based reports outlined above, a third highly influential project with multiple outputs – Te Kotahitanga[4] – looks in depth at the success factors for Māori students in mainstream secondary school classrooms. The project, initiated in 2001, ensued over several years and involved extensive research, observation, interviews with hundreds of students and teachers, professional development activity, and related qualitative and quantitative analysis. Te Kotahitanga reports broadly on teaching, school, and system-wide practices that enhance Māori student outcomes. For the purposes of this work, it is the teaching practices that are of primary interest. These are embedded within a Kaupapa Māori methodology that honours, respects, and includes key practices related to identity, genuine power-sharing, and Māori cultural practices.

[4] https://tekotahitanga.tki.org.nz/

The Te Kotahitanga project established an Effective Teaching Profile consisting of six elements proven to enhance the experience of Māori learners and lead to greater success in outcomes of learning. These are:

1. *Manaakitanga* – teachers care for their students as culturally located human beings above all else.
2. *Mana motuhake* – teachers care for the performance of their students.
3. *Ngā whakapiringatanga* – teachers are able to create a secure, well-managed learning environment.
4. *Wānanga* – teachers are able to engage in effective teaching interactions with Māori students as Māori.
5. *Ako* – teachers can use strategies that promote effective teaching interactions and relationships with their learners.
6. *Kotahitanga* – teachers promote, monitor and reflect on outcomes that in turn lead to improvements in educational achievement for Māori students.[5]

The culminating output in relation to teaching is the establishment of a proven approach that significantly improves outcomes for Māori learners. Bishop et al. (2007) termed this approach as a *Culturally Appropriate Pedagogy of Relations.*

In the (2007) Phase 3 report, which included the voices of hundreds of ākonga in relation to this pedagogy, Bishop et al. identify several of the key themes arising from learner experience of the six elements and what learners value in terms of teaching practice. While not a comprehensive summary, the following are practices ākonga describe as positively impacting their engagement, learning and success.

In relation to *manaakitanga*, ākonga value kaiako who treat them with respect; are compassionate, trustworthy, and fair; give generously of themselves; and are friendly but firm.

When considering *mana motuhake,* akōnga appreciate kaiako who have high expectations and communicate these regularly; have clear and regularly articulated goals; demonstrate a strong commitment to the students' learning, assist them with *how* to learn, and validate their success; and take their share of responsibility for student learning, critically reflect, and adapt where necessary.

Ākonga include the following teaching practices when considering *ngā whakapiringatanga* – clear and negotiated behavioural and relationship rules and

[5] https://tekotahitanga.tki.org.nz/About/The-Development-of-Te-Kotahitanga/Effective-Teaching-Profile

consequences; excellent, non- confrontational classroom management practices; and showing respect and inclusion.

'Wānanga as a learning forum involves a rich and dynamic sharing of knowledge. With this exchange of views, ideas are given life and spirit through dialogue, debate and careful consideration in order to reshape and accommodate new knowledge' (Bishop et al., p. 162). In relation to *wānanga,* ākonga value kaiako who provide opportunities for co-construction; demonstrate inclusion and validation of prior experience; give regular and supportive feedback and feed forward; and, who monitor their learning and adapt as necessary.

*Ako,* the reciprocal relationship between learning and teaching, is at the heart of this synthesis and highly relevant in relation to what works for Māori learners. They appreciate educators who include narrative pedagogy (appropriate sharing of personal experiences and stories); embed co-operative learning; use formative assessment and value student-generated questions; and ensure that the curriculum and teaching is integrated with a strong focus on language and literacy.

And finally, in relation to *kotahitanga,* the core concept of Bishop et al.'s research, ākonga note the importance of reinforcing aspirations and goals; encouraging attendance and retention; promoting engagement; and, critically, supporting student achievement.

The final word goes to a group of students who comment on this issue, saying:

'We just keep on getting higher and higher. We are getting higher in our marks; cos last year none of us passed, none of us. And now this year we are getting like 87%. Yeah it's good' (p. 165).

## Concluding comment

These syntheses bring additional and highly valuable considerations to the analysis of evidence-based practice that enhances learner outcomes in tertiary settings. That said, there are also many synergies with the theories underpinning adult learning in tertiary contexts that have been considered in this synthesis.

Given the added value of these comprehensive analyses, the key success factors from the compulsory sector evidenced here are woven into the mapping exercise and contribute to the set of principles and practices for learner success.

# 6 Success factors for Māori learners

Having looked at the seminal work that is Bishop's Te Kotahitanga, there is also a growing body of writing related to what makes a difference for Māori learners in the tertiary context. For the purposes of this synthesis, the focus is on four pieces of work, two generic and two in the context of workplace settings.

By way of brief introduction, Ngāwati (2021) clearly reinforces the situation for Māori learners, noting that 'Tertiary education has a long history of poor engagement, participation and retention of Māori students through sub-degree level study into higher education' (p.11). She notes that:

> 'Mason Durie (2005) has always advocated for a multi-level systems approach to addressing disparities experienced by Māori in the education sector. He explains that in order to achieve indigenous participation, these 'pathways' can be best explained as occurring in four broad areas; pathways that ensure and secure access to tertiary education; pathways that ensure successful completion of study; pathways that enable academic excellence; and pathways that lead to workforce development' (p.12).

It is, therefore, everybody's business.

It is important to note that all publications in this section provide ākonga voice to inform their thinking, analysis, and conclusions.

## Ngā hau e whā o Tāwhirimātea: Culturally responsive teaching and learning for the tertiary sector

The authors, Rātima et al., of this newly published (2022) work, acknowledge their predecessors, including Bishop and Pere, in creating this highly valuable resource for tertiary educators. They comment that their guide:

> 'is designed to provide practical advice and opportunities to reflect on what it means to teach in culturally responsive ways. It uses the metaphor of Ngā Hau e Whā o Tāwhirimātea – the four winds of Tāwhirimātea – to

represent the four core components of culturally responsive practice: whanaungatanga (relationships), manaakitanga (ethic of care), kotahitanga (unity) and rangatiratanga (student agency and leadership)' (Rātima et al., p. 11).

These core components – the four winds – are also strongly evident in Bishop's 2019 work.

The guide's metaphorical framework offers practical suggestions and is focused on culturally responsive practice that enhances learning for Māori ākonga. While it is critical not to diminish the importance of the focus on Māori learners in mainstream tertiary education that sits at the heart of this work, most of the practices and suggestions are highly relevant to all learners and articulate with many of the principles outlined in this synthesis, notwithstanding their specific reference to elements of tikanga Māori.

Several of the authors or contributors have themselves won National Tertiary Teaching Excellence Awards for their exemplary and sustained teaching and are consequently well positioned to provide guidance on effective practice that achieves improved learner outcomes.

Rātima et al. (p. 7) acknowledge that 'Life in the educational professions has always been fraught with intrigue and, often, with ambiguity', the same concerns expressed by others in this synthesis. They also ask the following questions that articulate strongly with the themes evident here, namely:

— 'How are we to understand the worldviews and learning styles of the diverse cultures that populate today's tertiary education settings?

— What are the origins of these orientations, and what are the most appropriate responses that professionals can offer?

— How can we assess the effects of our teaching, and what are the implications for students' outcomes?'

While they look in detail at how these themes are especially relevant for Māori learners, their questions deserve to be on every educator's lips.

This contemporary and very useful contribution to teaching practice in Aotearoa New Zealand teems with valuable guidance and practical suggestions of what culturally responsive pedagogy looks like, especially for Māori learners. The themes have been mapped into the spreadsheet and included in the principles and practices, where there is also a section which makes relevant reference to some of the suggestions outlined in Ngā hau e whā o Tāwhirimātea.

The second report in this section is an extremely wide-ranging investigation by Te Pūkenga (2020) into how to enhance success for all learners and Māori learners in a

range of educational contexts and modes. While also including staff and employer perspectives, it reflects, comprehensively, ākonga voice and provides an intense focus on what learners identify as key to their success in tertiary education. The report extends beyond elements of ako into broader factors influencing success but insights from Māori ākonga provide clear guidance as to what contributes to these students feeling welcome, valued, included and successful as a result of their engagement in tertiary education.

While it is not possible to cover all components of the report, the following are some key messages from ākonga as to what enhances their success.

— '… more holistic environments that were physically, culturally, emotionally, and spiritually safe and included the wellbeing of whānau. Māori values and principles were integral to providing the support and engagement Māori learners needed'.

— 'When learning experiences acknowledged that Māori learners brought valuable skills, competencies and experience to the table and reinforced their aspirations for success, learners would grow and flourish.'

— 'The importance of mātauranga Māori and te reo within teaching and learning was recognised yet often not prioritised.'

— 'Strengthened cultural consciousness within the system could lead to greater recognition of Māori strengths. Māori learners thrived when tutors/trainers were understanding, affirming, and were passionate about their learners succeeding.' (p. 5)

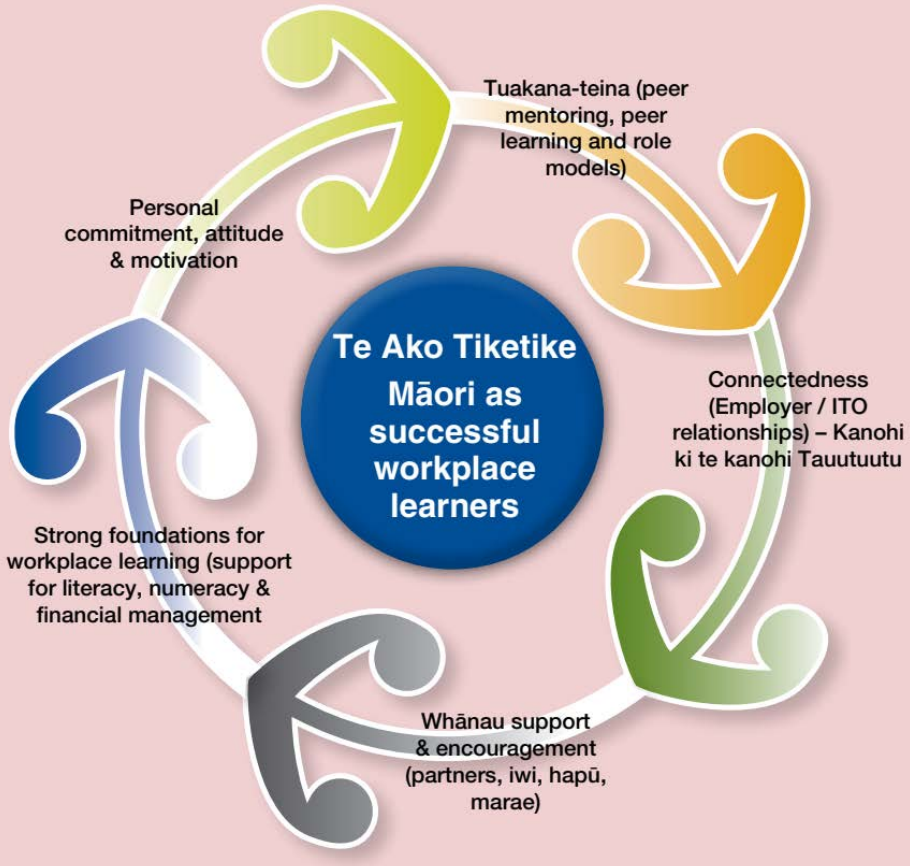
Readers are encouraged to delve further into this report which both validates the work of other authors here and provides a level of detail from ākonga that is compelling and timely.

## Successful Māori learners in workplace settings

Two reports are included here, each taking a different look at Māori learners in workplace settings.

The first, a summary report (Kerehoma, Connor, Garrow, & Young, 2013) published by Ako Aotearoa as an outcome of a funded project, looks specifically at the factors that enhance participation, engagement, and success for Māori learners, primarily in industry training organisations where outcomes remained stubbornly low in relation to the success of the total population.

Figure 1: Te Ako Tiketike: A model for successful Māori workplace learners




The report's key findings identify distinctive features of Māori learning preferences and behaviours. The summary of these highlights principles also evident in both Bishop's work and that of the authors of Ngā hau e whā o Tāwharimātea. These principles are:

— Ako – valuing the contributions of all and the primacy of collective learning;

— Whakapapa – the importance of honouring the genealogy that ākonga bring to their learning;

- Whanaungatanga – building of relationships and collaborative approaches to ako;
- Whānau – acknowledging that ākonga are the 'front door' to their wider whānau;
- Tuakana-teina – embedding mentoring relationships and support; and
- Kanohi ki te kanohi – the importance of face-to-face experiences to help build trust and engagement.

From a basis of these principles, the authors develop a model for effective workplace learning which is called Te Ako Tiketike (Kerehoma et al., p. 4) and which locates the principles in a series of processes that assist ākonga in workplace education to achieve success in their learning endeavours.

The remainder of the report unpacks each of the components of the model in terms of what they look like in practice and in relation to the principles outlined earlier. Key messages include the very familiar references to the following as enablers of success – the importance of high expectations; collaboration and connectedness; supportive, trusting, and open relationships; building ākonga agency and responsibility; culturally safe learning environments; and celebrating success.

The second more recent publication (Lucas, Rae, Hogg, Anderson, & Cairncross, 2022), investigates issues related to employability for Māori graduates as an outcome of work-integrated learning opportunities in a degree programme. The authors set out to determine whether employability is culturally influenced and, if so, how work-integrated learning programmes 'could be improved for indigenous students who may struggle with Western approaches to education' (p. 309). They sought and analysed Māori student and graduate perspectives, surfacing insights into 'the value of recognizing cultural identity as ngā taonga hunahuna (hidden treasures)'.

Lucas et al. determined that students and graduates valued 'opportunities that enabled and encouraged personal development, including the acknowledgment of, and relationship with their Māori culture' (p. 313) embedded within their studies. Several students noted how they were able to develop their identity as Māori through their studies and explore and expand that into work-integrated learning possibilities where that identity was valued.

This is key information for those involved in the provision of work-integrated learning, including the importance of appropriately placing ākonga and ensuring workplaces honour the different ways of being and cultural preferences for Māori. Part of this may well be ensuring the principles outlined above by Kereoma et al. are considered as part of placements.

Ngāwati (2021) too notes the centrality of experiential learning, including that which occurs in workplaces. She confirms that experiential learning is valued by ākonga because 'the focus isn't so much on a career path, but on growing a well-rounded human, well-equipped with many life experiences' (p. 35). For young people this is doubly important because 'they often don't know what is out there for them until they experience it'.

## Concluding comment

While not attempting to comprehensively cover the literature relating to success for Māori ākonga, Bishop's writing is supplemented by these reports and, collectively, they are indicative of principles and practices that enhance outcomes. It is important to acknowledge that these publications all focus on practices and successful outcomes for *Māori* learners and the centrality of that must not be lost.

Those planning and implementing successful programmes for Māori learners will supplement the principles here with specific Kaupapa Māori practices that are contextualised and relevant to ākonga in the local settings. As indicated earlier, there are many more valuable suggestions to advance this, particularly in Ngā hau e whā o Tāwhirimātea.

There is ample evidence as to what works to enhance success for Māori in tertiary settings. The job now is to get on with implementing what is clearly articulated in these and other publications.

The synergies between these principles and practices and those emerging from the broader analysis of successful tertiary learning and teaching are nevertheless striking, and both sets of information are highly valuable in determining the factors that make a difference.

# 7 Success factors for Pacific learners

The summary document referred to for Pacific learners is the most recent work completed in relation to Pacific learning and teaching. *From good to great: The 10 habits of phenomenal educators for Pacific learners in New Zealand tertiary education* (Chu-Fuluifaga & Ikiua-Pasi), published in 2021, reports on a project completed at a university and a polytechnic with Pacific educators and learners. The research question was "Who are phenomenal educators for Pacific learners, and what do they do in their practice?" At the heart of the research was the concern that 'In Aotearoa New Zealand the statistics about educational issues for Pacific learners continues to be prominent with issues of completion, retention, and participation in tertiary education' (p. 9).

Using an appreciative enquiry approach, and storying as a qualitative research methodology, the study identifies a range of practices that make a difference for Pacific learners with the aim of 'turning theory into practice'. The authors cite a number of recent studies that identify elements of successful practice for Pacific learners and note that, in their writing, they build on these earlier works. While the sample size was relatively small (12 Pacific educators), the voices of several hundred students were captured to determine what practices make a difference to the educational experience and outcomes of these learners.

The authors categorise each of their 12 educators as different types, including but not limited to: the 'pioneer' educator – first to try new approaches or practices; the 'contextual' educator – strong focus on place-based learning; the 'creative' educator – designs ways to stimulate each person's skills and talents; the 'connector' educator – excels at making connections with the Pacific communities the students come from; and the 'innovative' educator – intensely researches new and innovative methods of tertiary teaching. Notwithstanding these unique descriptions of teaching approaches, the authors settle on 10 practices that are common to the educators and effective in terms of engaging Pacific learners and contributing to their success.

These 10 practices for phenomenal educators are:

1. Fenua: The pedagogy of reflection
2. Moana: Know your Pacific learner and context
3. Vaka: Educate with phenomenal Pacific-centric methods
4. Le Teu le Va: Build teaching and learning relationships with Pacific learners
5. Ola: Develop phenomenal practices
6. Teatea: Motivation and good work habits
7. Aupuru: Cultivate creativity and enthusiasm
8. Putuputu: Construct a Pacific learning community
9. Arofa: Enable mentoring to be a natural part of your teaching and manage the 'wobbles' that arise
10. Ti'ama: Deconstruct and emancipate your Pacific learners' experiences.

Even a quick glance at the list above indicates significant synergies with the emerging practices from the broader tertiary education literature, though the specifics of the Pacific contexts and learners is unique.

Attributes, skills, and qualities that sit within each of these practice categories were extracted following talanoa with Pacific students who identified how each educator used these practices and the impact on them as learners. There is a comprehensive list of these in the final report, and reference to them is made in each of the principles and indicative practices outlined in this document.

# 2 Learning and teaching in digital environments

It is difficult to imagine an innovation that has impacted learning and teaching practices more than the digital environment in recent years, regardless of context. Language around this includes digital learning, elements of distance learning, online learning, eLearning, technology-enabled learning, and more. The term open, flexible, and distance learning (ODFL) is increasingly used. There is substantive related literature which will only increase as the digital innovations themselves evolve. Accordingly, as previously, this overview touches on some of the key considerations and principles that affect ako in tertiary contexts, rather than attempt a comprehensive coverage.

It is important to note the critical role that technology plays in contemporary learning and teaching, and the related challenges of educator capability development. The Educause Horizon Report[6] (Pelletier, McCormack, Reeves, Robert, & Arbino, 2022), usually published annually, provides invaluable commentary on social, technological, economic, environmental, and political factors impacting learning and teaching, with a focus on educational technologies. The 2022 report covers a range of critical factors, not least of which is the ongoing impact of Covid and the unlikely scenario that tertiary teaching will return to 'normal'.

In terms of educator capability development, the authors note that development for hybrid and remote teaching had the greatest potential for impact and was the least risky and amongst the lowest-cost strategies. They also state that:

> 'investing the time and resources to ensure faculty are trained and equipped to effectively engage in hybrid and remote learning environments may be one of the easiest and highest-reward decisions an institution can make, and it may produce the biggest returns in improved student experiences and learning' (Pelletier et al., 2022, p. 33).

[6] https://library.educause.edu/resources/2022/4/2022-educause-horizon-report-teaching-and-learning-edition

While some considerable progress has been made on progressing educator capability development, challenges remain to assist educators to continually adapt their practice to engage effectively with the positive affordances of educational technologies.

## What the literature tells us

As indicated, there is an expansive literature growing exponentially and readers might value delving into resources such as JISC[7] (Joint Information Systems Committee) for a wealth of resources and information relating to ODFL. Closer to home, ASCILITE[8]provides invaluable local Australian and New Zealand resources and conferences for what is an ever-changing ODFL and teaching environment. While it is critical to continue evolving our thinking in this area, it is also important not to forget how ODFL has been emerging and adapting over time and what some of the foundational principles are, rather than focus on more specific innovations.

Delving more deeply into the literature that looks specifically at digital learning, reveals recommendations that acknowledge the specific nature of this delivery mode. In a paper prepared by the New Zealand Council for Educational Research (NZCER) for the ITP sector in 2004, care was taken to consider the unique potential and challenges presented by digital learning, given that this was then (and will continue to be) a developing pedagogical approach. An overarching statement addressing the question of whether digital learning can enhance student learning, proposes that 'It can improve understanding and encourage deeper learning, if there is careful course design and choice of technology in relation to learning objectives that aim to encourage deeper learning' (p. 30). This one statement articulates with many of the premises in this synthesis and suggests that effective teaching practices are at the heart of digital learning, just as they are in face-to-face modes. These include factors such as clarity of learning outcomes, learning from experience, active learning, motivation, providing feedback, and the centrality of relationships and interactions.

The major challenge is thus ensuring that those who teach in this way know of its distinctive nature and can use it successfully. What is different for digital learning is the challenge of ensuring that the technology is reliable, simple, and easily accessed, and that those with limited experience of it are likely to require more support in engaging successfully. It is also important to note the caution that students with higher self-management skills are more likely to achieve success in digital environments.

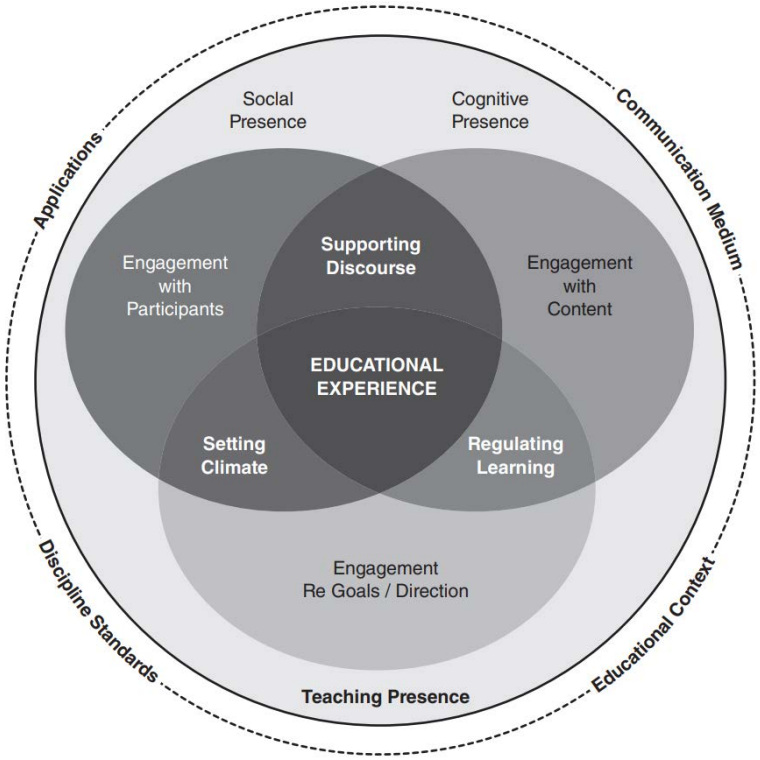
[7] https://www.jisc.ac.uk

[8] https://ascilite.org/

Anderson and Dron (2011) outline three 'generations' of distance learning (with an increasing focus on digital learning) that align with dominant theoretical perspectives at the time they were implemented. They argue that each of these generations was enabled by the technologies that supported them and name them as cognitive-behaviourist, social constructivist, and connectivist pedagogies. They conclude that each of them offers possibilities 'as determined by the learning content, context, and learning expectations' (p. 80).

It is not difficult to connect these approaches to the broader literature of tertiary learning. In cognitive-behaviourism, the dominant learning activity is described as 'read and watch'. In social constructivism, 'discuss, create, and construct' predominate. And in connectivism, learners 'explore, connect, create, and evaluate'. There are links here to what the earlier theorists had to say and Hattie's contention that multiple approaches to learning are required at different parts of the learning process. While connectivism requires higher level thinking and autonomy skills, these are achieved through successful participation in other activities that have a lesser cognitive demand to create a well-rounded learning experience.

More recent publications report on the development of digital learning and note the role earlier iterations have played in refining theories and practice. Cleveland-Innis, Garrison, and Vaughan (2019) explain the Community of Inquiry (CoI) framework noting that it benefits from more than two decades of research. They contend this has resulted in empirical evidence that 'the CoI theoretical framework represents a coherent set of articulated elements and respective models describing a higher learning experience applicable to a wide range of learning environments …' (p. 69) extending to higher education.



In looking at the CoI framework, most elements relate directly to effective learning and teaching practice and the principles described here.

While language differs, many concepts of interest to effective learning and teaching remain central to this model.

The authors explain in detail the core components and how they impact student learning. They conclude that there are three ways in which the implementation of this framework can positively impact education. They name these as:

— Providing new ways of thinking about education including promoting 'more engaging and sustainable learning skills on the part of students. These skills are more aligned with 21st century workplace skills; lifelong, self-regulated yet collaborative learning ….'

— Providing 'deeper experience as a digital citizen; a global environment will not function effectively without such skills.'

— Providing a 'more explicit and active teaching role for faculty, one that provides support and direction for guiding students through an active, engaging learning experience toward deep, meaningful learning…' (p. 73).

Familiar indeed.

Jonassen, Howland, Marra, and Crismond (2020) also comment on the role and purpose of digital learning. They contend that 'If technologies are used to foster meaningful learning, then they will not be used as delivery vehicles' (p. 7). Rather, they say, their role is as 'engagers and facilitators of thinking', and they outline the ways in which this should occur. They promote the following roles, each of which is unpacked with a number of examples of how this might look. These roles are technology as:

— tools to support knowledge construction;

— information vehicle for exploring knowledge to support learning by constructing;

— authentic context to support learning by doing;

— social medium to support learning by conversing; and

— intellectual partner to support learning by reflecting.

Embedded in these roles are practices aligned with those presented in this synthesis – knowledge construction, learning support, active and experiential learning, dialogue and discussion, and reflection. Technology, when used effectively, is an enabler of such practices which are proven to support and progress learning.

The work of Meyer, Rose, and Gordon (2014) provides guidance on *Universal Design*

*for Learning*, an approach that focuses on using design principles that make digital learning accessible for all. They describe three key principles – representation, action and engagement, and expression. Within these principles are challenges for educators to consider multiple ways of using technologies to allow all learners to participate and experience success. This includes presenting information in multiple ways and formats, using a range of different ways for learners to interact and engage with material and each other, and finding the best methods of motivating learners through various approaches. These principles can be seen in the approaches outlined above but, are here of particular importance in relation to issues of equity, access, and participation.

While there is much more to be explored and examined in terms of the impact of technologies on learning and teaching, Laurillard (2012), in discussing *Teaching as a Design Science*, emphasises that when approached from a design perspective, the 'aim is to keep improving its practice, in a principled way, building on the work of others'. 'Because technology is changing both what and how students learn we can only lead educational innovation by being clear about the principles of designing good teaching and learning, and therefore what education needs from technology' (p. 8).

These are salient reminders to consider digital learning primarily from a pedagogical perspective, incorporating the principles outlined in this synthesis, and then determine the ways in which technology can support the desired process and outcomes of learning.

# 9 Hauora and wellbeing

While many of the writers included in this synthesis note that education is about the whole person and not only about cognition, in recent years there has been an increase in attention paid to broader factors influencing learning. This focus has been heightened by the Covid environment when health, mental health, and wellbeing issues have been specifically pertinent.

*Kei te pai?* (Gharibi, 2018) represents the most comprehensive investigation into tertiary student mental health in Aotearoa. Though the publishers note that the data is collected through an 'opt-in' survey methodology, it provides insight into the factors that impact students' mental health through the voices of 1,762 tertiary students representing a broad demographic and across more than 15 tertiary organisations. Ninety four per cent of respondents were domestic students.

Although the issues are very complex and not all related to the learning and teaching environment, several factors are relevant to this work. 'Of the self-reported triggering factors of depression, stress and anxiety, the results showed that feelings of loneliness, eating habits, adjusting and coping with university/student life and academic anxiety were the most triggering factors respectively' (Gharibi, p. 9). The most significant factor for considering dropping out was feeling overwhelmed. Almost 60% of respondents reported that they were excellent or above average students, providing clear evidence these challenges are not just about capability, and potentially sit beneath the surface for many ākonga. Student mental wellbeing is everybody's business.

One of the most comprehensive documents related to addressing some of the identified mental wellbeing issues is published by the Higher Education Academy (now Advance HE) in the UK. With a focus on embedding mental wellbeing into the curriculum, thus making it visible and relevant, the authors note that:

> 'Mental wellbeing is core to the curriculum in the way we teach and what we teach. It is not solely the responsibility of support services, rather we have a collective responsibility to promote the wellbeing of our students. Maximising their success in higher education is dependent on ensuring our own and our colleagues' wellbeing too' (Houghton & Anderson, 2017, p. 5).

These authors promote a number of easily actioned ways of addressing both curriculum content and process to support all students and promote mental wellbeing in the learning and teaching context. Although they note that mental wellbeing is truly interdisciplinary, a valuable component of their work are the discipline-specific ideas for naturally embedding appropriate wellbeing content into learning and teaching.

Content is only part of the equation, however, and, in terms of process, key factors known to positively impact mental wellbeing generally are highlighted, including connection; being active; keeping learning; taking notice; and giving. These are well-validated approaches that are known to enhance wellbeing outside the learning and teaching process and connect to many of the themes in this synthesis. Many of the principles included here allow opportunities to attend to each of these practices through relationships, connection, active and experiential learning, student engagement in their own learning process, and manaakitanga.

Houghton and Anderson provide examples in relation to each of the process possibilities.

Matthewman, Jodhan-Gall, Nowlan, O'Sullivan, and Patel (2018) look more broadly at the concept of wellbeing in relation to undergraduate education. They take the PERMA model (Seligman, 2011) which focuses on five key building blocks of wellbeing – positive emotions, engagement, relationships, meaning, and achievement. The authors report examples of how these are woven into a tertiary education context. Although these are not explored further here, the building blocks are strongly connected to the principles outlined in this synthesis. Educators will find that making the link between these and teaching practice to ensure the learning environment is inclusive of such approaches will have significant potential to improve both learning and wellbeing.

Many of the issues outlined here have come to the fore in and following the Covid pandemic in Aotearoa. In 2020 and 2021, at the height of the pandemic lockdowns, the number of domestic students enrolling in tertiary education overall, including work-based learning, increased by about 11% when compared with 2019 numbers (Smart, 2021). Unsurprisingly numbers in lower-level certificates particularly in work-based learning dropped. 'The largest percentage increase was at masters level, which increased by 23% between 2019 and 2021, followed by Level 5-7 certificates/diplomas (20%)' (Smart, p. 8).

At the same time, both kaiako and ākonga experienced huge challenges in adapting approaches to learning and teaching, as online learning became the predominant delivery mode virtually overnight. In a study across four continents, Bartolic et al. (2022) comment that Covid-19 had a 'profound influence' on learning and teaching in higher education. They base their analysis on information from 309 courses and the educators responsible for them. They note that in the contexts of their study, the following factors, many relevant to Aotearoa, predominated:

> ‘Prior to the COVID-19 pandemic, teaching and learning in higher education faced multiple challenges. Enrolments were rising, but staffing levels were lagging. Consequently, class sizes were ballooning (Chan, 2018; Marginson, 2016). The mental health and well-being of students and staff was deteriorating (Auerbach et al., 2018). Financial support had weakened and performance indicators were eroding academic autonomy in some jurisdictions (Ryan, 2015). In the spring of 2020, the Sars-CoV-2 virus thus impacted a system already encumbered by strained pedagogical supports’ (p. 518).

The authors investigate multiple components of learning and teaching in the digital environment, which was familiar to some and a challenge to many, not least because of the speed with which the transition happened, concluding ‘that the pandemic’s

impact was so overwhelming that all faculty members, in all disciplines, and at all schools, found that teaching required more effort' (Bartolic et al., p. 527).

Further, findings indicate that '56% of instructors report[ed] a lower quality learning experience for students, [while] 25% reported more positively... Some instructors felt they were doing more to cope with student stress, than they were focusing on student learning' (p. 527).

The authors are quick to note that their findings cannot necessarily determine what will happen as the initial 'tidal wave' of learning and teaching effects subside, if indeed they do. They conclude that 'Pragmatic responses to an abrupt pivot are unlikely to provide a solid plan on which to build back better' (p. 530).

Arday (2022) also contributes to the discussion, citing a broad range of factors that impacted student learning and wellbeing during the Covid-19 pandemic, including some of those discussed above. Others relating to the student experience are expanded. Arday (p. 368) reports that in one study, 'experiences and degrees of satisfaction varied, with students considering distance education as flexible in terms of time and place, but contributing to physical and psychological health concerns, including fear, anxiety, stress and attention problems (Masalimova et al., 2022)'. Another study cited found that '93 per cent of students reported an increased use of social media during the pandemic, which they linked to potential impacts on mental health, lack of sleep and stress' (p. 368). Even factors such as body dysmorphia are discussed, with their impact on how and when students saw themselves on screen and how this impacted their engagement and outcomes.

There are salient reminders of how wellbeing of both educators and learners are critical to engagement and success at the best of times, exacerbated significantly in the challenging times. The elements of effective teaching outlined in this synthesis are part of the solution for attending to this, regardless of delivery mode, though the challenges remain, and the solutions are often complex. Positive interpersonal relationships become even more important as do the issues of listening to student feedback (or the lack of it) and making changes as required to ensure the learning environment remains a safe and engaging space with positive learner outcomes.

# 10 Insights from neuroscience

Before bringing this review to a close, one last consideration relates to the valuable information emerging from neuroscience and how the brain works in relation to learning. There is no attempt to be comprehensive in this area, rather to introduce the topic and the key factors relating to learning that have potential for consideration in adult learning.

Tennant (2019) writes about psychology and adult learning and includes a chapter on cognitive neuroscience. In the abstract he notes that 'The allure of neuroscience for educators is twofold: first, it offers the possibility of confirming, at the neuronal level, the benefits of existing educational practice; second, it offers the possibility that neuroscientific knowledge can be used productively in educational settings'. This aligns well with the approach taken here – neuroscience confirms many of the existing principles that underpin adult learning, but also provides the opportunity to rethink some practices on the basis of new information.

Davis et al. (2014) talk about the science of making learning stick. They provide an update on what is known as the AGES model and explain this as follows:

> Neuroscience suggests four principles that embed new learning so that it sticks (Davachi, Kiefer, Rock, & Rock, 2010). The four principles, which we term "AGES," summarize the big drivers of memory systems in the brain during encoding: there must be sufficient attention (A) on the new material; learners must generate (G) their own connections to knowledge that they already have; moderate levels of emotion (E) are necessary; and coming back to the information regularly—spacing (S)—works wonders (p. 1).

The authors expand on these principles which are already familiar through this synthesis and provide an update on their model.

In relation to **attention**, the key concept is that multitasking is the enemy of learning. The brain is unable to continually process information effectively and, after a maximum of 20 minutes, needs to be refocussed. The authors note the role

of technology which provides instant rewards but distracts the learner's attention. In summarising the key factors in relation to attention, they note that 'to make best use of attention for learning that lasts, aim for a single focus of attention on the point to be remembered. Be thorough and consistent about limiting multitasking' (p. 5). Further, they suggest that, as attention fatigues and drifts by about 15 to 20 minutes, this is the right time to shift modalities and engage in discussion, time to digest or take a break.

**Generating** connections is about how we create and share our connections to new ideas. 'When we take the time and effort to generate knowledge and find an answer rather than just reading it, our memory retention is increased' (p. 5). There are immediate connections here with experiential learning and active learning processes. The authors support social information generation, metacognitive generation, and insight generation, all of which assist in consolidating thinking and embedding new ideas. In terms of practice, they note that 'If you want learners to learn, offer ways for them to generate their own connections between new ideas and their existing knowledge. Helping them self-generate connections will be more valuable than telling them the connections' (p. 7).

Generation works particularly well with the constraints of attention outlined above as it allows a break from fixed periods of information input and allows learners to generate new understandings. Allowing space and provocations for generating insights, promotes reflection that is not bound by a specific task.

The third component, **emotions**, also taps into existing educational theory (see, for example, Boler, 1999). Historically, emotions have been considered as not appropriate in the learning process, but neuroscience confirms not only their existence but also their value when they occur and are utilised appropriately in learning contexts. Many educators will be wary of emotions but Davis et al. note their relative impacts:

'too much emotional arousal can trigger a meltdown of sorts, indirectly reducing the performance of the hippocampus. It can interfere with attention, which can then interfere with memory. As we all know from experience, strong emotions can be distracting, and without focus, it is harder to learn. … Positive emotion has more leeway in that regard, and also has been shown in research to aid creativity, insight, and to expand perception—all of which are helpful in a learning context' (p. 8).

Having emotions is only half the equation, however, and assisting learners to regulate emotions and use them effectively to enhance their learning is also key. So moderate levels of emotion arousal in the learning process enhance retention, whether the emotion be positive or negative. However, positive emotions have a greater impact and aid in the development of insights and social practices such as collaboration.

And finally, the concept of **spacing** also offers both reinforcement and extension of adult learning theory. 'Spacing—having some space (usually a day or more) between learning and review sessions—is the most counterintuitive and yet perhaps most important of the four learning principles' (p. 8). This principle relates to learning both within and between sessions and the science suggests that having gaps between the receiving or creation of new knowledge or understandings and the revision of these, works wonders in confirming the learning. The authors extend on this principle in terms of how it relates to assessment and workplace learning with evidence of the value. They urge teachers to discuss the science with learners and discourage them from cramming processes.

For teachers, they suggest that learning sessions are spaced out with opportunities to revisit the content in engaging ways. Sleep between study sessions is particularly valuable so opportunities to return to the material again over time is optimal in consolidating learning.

To summarise, the authors contend that neuroscience has much to enhance learning and suggest:

— 'Change focus every 20 minutes or so and allow focus circuits to refresh. Remove multitasking wherever you find it.

— Once your learners have given a single focus of attention to an idea, move to the next step, which is to guide them to self-generate connections to their existing knowledge.

— Both learners and trainers can become aware of their emotions and regulate them to achieve optimal – moderate-positive – emotional arousal for learning.

— In the domain of spacing, we see that onetime learning misses out on an important learning tool. … Return to your material after some time has passed' (pp. 11-12).

While this summary merely skims the surface on the learning emerging from neuroscience, no doubt these insights will continue to inform tertiary teaching practice which is never static or complete. Neuroscience has some simple but powerful guidance on how learning sessions and working with ākonga can be enhanced to aid the learning process.

# 11 Summary

As indicated at the outset of this synthesis, there is no attempt to summarise comprehensively the evidence available as to what impacts positive outcomes of the learning process in tertiary settings. Rather, key theories and evidence of effective practice have been reviewed briefly with a view to identifying practices that most educators could implement to enhance outcomes for learners. Many others could have been reviewed.

Key theorists agree, regardless of context, on the practices that have proven impact on engaging ākonga and enabling them to achieve successful outcomes. This is true whether the ideas are from the compulsory sector or tertiary education contexts and are complemented by emerging thinking from a range of related fields.

The principles and indicative practices in this publication, tease out these key elements of success and provide educators with guidance on practices that make a difference. It is up to each educator and/or team to determine how these might best be implemented for impact in local contexts or diverse modes.

# 12 Bibliography

Please note that this is a bibliography and not a reference list. All sources were reviewed during the literature synthesis phase, and considered in the development of the principles, but not all were cited. Those not directly cited are included as valuable literature for consideration.


Adams, M. (1997). Pedagogical frameworks for social justice education. In M. Adams, L. A. Bell, & P. Griffin (Eds.), *Teaching for diversity and social justice: A sourcebook* (pp. 30-43). Routledge.

Aiko Consultants Limited for Te Pūtea Whakatupu Trust (2020). *The effects of covid 19 on Māori education outcomes*. (2020). Retrieved on 29 January 2023 from https://tpwt.maori.nz/assets/Post-COVID/a15bee2400/The-Effects-of-COVID-19-on-Maori-Education-Outcomes-V2.pdf.

Ambrose, S.A., Bridges, M. W., DiPietro, M., Lovett, M. C., & Norman, M. K. (2010). *How learning works: Seven research-based principles for smart teaching*. Jossey-Bass.

Amundsen, D. (2019). Student voice and agency for Indigenous Māori students in higher education transitions. *Australian Journal of Adult Learning, 59(3), 405-434*. https://files.eric.ed.gov/fulltext/EJ1237528.pdf. Retrieved 29/1/2023.

Anderson, T. & Dron, J. (2011). Three generations of distance education pedagogy. *The International Review of Research in Open and Distributed Learning,* 12(3), 80–97. https://doi.org/10.19173/irrodl.v12i3.890

Apanui, N. & Kirikiri, T. (2015). *Hei toko i te tukunga: Enabling Māori learner success*. Ako Aotearoa - National Centre for Tertiary Teaching Excellence.

Arday, J. (2022). Covid-19 and higher education: The times they are a'changin. *Educational Review,* 74:3, 365-377. DOI: 10.1080/00131911.2022.2076462

Ashwin, P., Boud, D., Coate, K., Hallett, F., Keane, E., Krause, K-L., Leibowitz, B., MacLaren, I., McArthur, J., McCune, V., & Tooher, M. (2015). *Reflective teaching in higher education*. Bloomsbury.

Bandura, A. J. (1977). *Social learning theory*. Prentice Hall.

Barnett, R. (2004). Learning for an unknown future. *Higher Education Research & Development, 23*(3), 247-260.

Bartolic, S.K., Boud, D., Agapito, J., Verpoorten, D., Williams, S., Lutze-Mann, L., Matzat, U., Moreno, M.M., Polly, P., Tai, J., Marsh, H.L., Lin, L., Burgess, J-L., Habtu, S., Rodrigo, M.M.M., Roth, M., Heap T., & Guppy, N. (2022). A multi-institutional assessment of changes in higher education teaching and learning in the face of COVID-19. *Educational Review,* 74:3, 517-533. DOI: 10.1080/00131911.2021.1955830

Beetham, H., & Sharpe, R. (2020). *Rethinking pedagogy for a digital age: Principles and practices of design* (3rd ed.). Routledge. https://doi.org/10.4324/9781351252805

Benton, R., & Benton, N. (1995). The unbroken thread: Māori learning and the national qualifications framework. New Zealand Council for Educational Research https://www.academia.edu/27552636/The_Unbroken_Thread_Maori_Learning_and_the_National_Qualifications_Framework. Retrieved 27/1/2023.

Bergeron, P. J. & Rivard, L. (2017). How to engage in pseudoscience with real data: A criticism of John Hattie's arguments in Visible Learning from the perspective of a statistician. *McGill Journal of Education / Revue des sciences de l'éducation de McGill*, 52(1), 237–246. https://doi.org/10.7202/1040816ar

Biggs, J. (1996). Enhancing teaching through constructive alignment. *Higher Education*, 32, 347-364. https://doi.org/10.1007/BF00138871

Biggs, J. (1999). *Teaching for quality learning at university*. Society for Research into Higher Education & Open University Press.

Biggs, J. (1999). What the student does: Teaching for enhanced learning. *Higher Education Research and Development,* 18(1), 57-75.

Biggs, J. & Tang, C. (2011). *Teaching for quality learning at university: What the student does* (4th ed). Society for Research into Higher Education & Open University Press.

Bishop, R. (2019). *Teaching to the northeast: Relationship-based learning in practice*. NZCER.

Bishop, R., Berryman, M., Cavanagh, T., & Teddy, L. (2007). *Te Kotahitanga Phase 3 Whanaungatanga: Establishing a culturally responsive pedagogy of relations in mainstream secondary school classrooms.* Report to the New Zealand Ministry of Education.

Blömeke, S., Olsen, R.V., Suhl, U. (2016). Relation of student achievement to the quality of their teachers and instructional quality. In T. Nilsen, & J. E. Gustafsson, (Eds.), *Teacher quality, instructional quality and student outcomes*. IEA Research for Education, vol 2. Springer. https://doi.org/10.1007/978-3-319-41252-8_2

Boler, M. (1999). *Feeling power*. Routledge.

Boud, D. (2001). *Knowledge at work: Issues of learning.* In D. Boud & N. Solomon (Eds). *Work-based learning: A new higher education?* (pp. 18-33). Society for Research into Higher Education & Open University Press.

Boud, D., & Solomon, N. (2001). Repositioning universities and work. In D. Boud & N. Solomon (Eds). *Work-based learning: A new higher education?* (pp. 34-43). Society for Research into Higher Education & Open University Press.

Brookfield, S. D. (1990). *The skillful teacher*. Jossey-Bass.

Brookfield, S. (1995). *Becoming a critically reflective teacher.* Jossey-Bass.

Cedefop, (2015). *Vocational pedagogies and benefits for learners: Practices and challenges in Europe.* Publications Office of the European Union. Cedefop research paper; No 47.

Chickering, A.W., & Gamson, Z.F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin*, *March*, 3-7. https://eric.ed.gov/?id=ED282491

Christodoulou, D. (2014). *Seven myths about education.* Routledge.

Chu-Fuluifaga, J. & Ikiua-Pasi, J. (2021). *From good to great: The 10 habits of phenomenal educators for Pacific learners in New Zealand tertiary education.* Ako Aotearoa.

Claxton, G. (1999). *Wise up: The challenge of lifelong learning*. Bloomsbury.

Cleveland-Innes, M., Garrison, D.R., & Vaughan, N. (2018). The community of inquiry theoretical framework: Implications for distance education and beyond. In M. G. Moore & W. Diehl, C. (Eds.), *Handbook of distance education* (4th ed., pp. 67-78). Routledge.

Coe, R., Rauch, C. J., Kime, S., & Singleton, D. (2020). *Great teaching toolkit: Evidence review*. Evidence Based Education. https://assets.website-files.com/5ee28729f7b4a5fa99bef2b3/5ee9f507021911ae35ac6c4d_EBE_GTT_EVIDENCE%20REVIEW_DIGITAL.pdf

Csikszentmihalyi, M. (1985). Emergent motivation and the evolution of the self. In D. A. Kleiber & M. L. Maehr (Eds.), *Advances in motivation and achievement* (vol. 4, pp. 93-119). JAI Press.

Davis, J., Balda, M., Rock, D., McGinniss, P., & Davachi, L. (2014). The science of making learning stick: An update to the AGES model. *NeuroLeadership Journal,* 5, 1-15. Retrieved 10.3.23.

Devlin, M., & Samarawickrema, G., (2010). The criteria of effective teaching in a changing higher education context. *Higher Education Research & Development* Vol. 29, No. 2, April, 111–124.

Forsyth, R. (2022). *Confident assessment in higher education.* SAGE publications.

Fry, H., Ketteridge, S., & Marshall, S. (2009). *A handbook for teaching and learning in higher education: Enhancing academic practice* (3rd ed.). Routledge.

Gharibi, K. (2018). *Kei te pai? Report on student mental health in Aotearoa*. New Zealand Union of Students Associations.

Hartnett, M. (2019). Motivation in distance education. In M. G. Moore & W. Diehl, C. (Eds.), *Handbook of distance education* (4th ed., pp. 145-157). Routledge.

Hattie, J.A.C. (2003). *Teachers make a difference: What is the research evidence?* Paper presented at the Building teacher quality: What does the research tell us? ACER Research Conference. Retrieved from https://research.acer.edu.au/research_conference_2003/4/

Hattie, J. A. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement.* Routledge.

Hattie, J. (2023). Why teaching strategies don't make you an expert teacher. *TES Magazine.* Retrieved 17.2.23 from: https://www.tes.com/magazine/teaching-learning/general/john-hattie-visible-learning-teaching-strategies-dont-make-you-expert

Hattie, J.A., & O'Donoghue, G. (2018). A model of learning: Optimizing the effectiveness of learning strategies (pp 97-113). In K. Illeris (Ed.) *Contemporary theories of learning: Learning theorists ... in their own words*. Taylor & Francis Group.

Hénard, F., & Roseveare, D. (2012). *Fostering quality teaching in higher education: Policies and practices.* OECD. https://www.oecd.org/education/imhe/QT%20policies%20and%20practices.pdf

Houghton, A-M., & and Anderson, J. (2017). *Embedding mental wellbeing in the curriculum: Maximising success in higher education.* Higher Education Academy.

Illeris, K. (Ed). (2008). *Contemporary theories of learning: Learning theorists ... in their own words.* Routledge.

Jonassen, D., Howland, J. L., Marra, R. M., & Crismond, D.P. (2020). *Meaningful learning with technology* (3rd edn.). Pearson.

Jones, K. & Brown, C. (2002). Manaakitanga: Ethic of care. In M.T. Ratima, J.P. Smith, A.H. Macfarlane, N.M. Riki, K-L. Jones, & L.K. Davies, (Eds.), *Ngā hau e whā o Tāwhirimātea: Culturally responsive teaching and learning for the tertiary sector* (pp. 21-27). Canterbury University Press.

Kember, D., & McNaught, C. (2007). *Enhancing university teaching: Lessons from research into award-winning teachers*. Routledge

Kerehoma, C., Connor, J., Garrow, L., & Young, C. (2013). *A model for successful Māori learners in workplace settings.* Ako Aotearoa.

Knight, P. (2002). *Being a teacher in higher education*. Society for Research into Higher Education & Open University Press.

Knowles, M.S. (1980). *The modern practice of adult education: From pedagogy to andragogy. Association* Press.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development.* Prentice-Hall.

Laurillard, D. (2012). *Teaching as a design science: Building pedagogical patterns for learning and technology*. Routledge.

Lubicz-Nawrocka, T. & Bovill, C. (2021). Do students experience transformation through co-creating curriculum in higher education? *Teaching in Higher Education.* DOI: 10.1080/13562517.2021.1928060

Lucas, B. (2014). *Vocational Pedagogy: What it is and why it matters.* Background note for UNESCO-UNEVOC e-Forum.

Lucas, P., Rae, S., Hogg, R., Anderson, N., & Cairncross, C. (2022). "It is a superpower!" Being Māori enhances employability. *International journal of work-integrated learning*, *23*(2), 309-322. https://openrepository.aut.ac.nz/handle/10292/15206 Retrieved 24/2/2023.

Macfarlane, S., & Derby, M. (2022). Whanaungatanga: Relationships. In M.T. Ratima, J.P. Smith, A.H. Macfarlane, N.M. Riki, K-L. Jones, & L.K. Davies, (Eds.), *Ngā hau e whā o Tāwhirimātea: Culturally responsive teaching and learning for the tertiary sector* (pp. 28-33). Canterbury University Press.

Marshall, S. & Shepherd, D. (2016). *E-Learning in tertiary education. Highlights from Ako Aotearoa projects.* Ako Aotearoa.

Marton, F., & Säljö, R. (1984). Approaches to learning. In F. Marton, D. Hounsell, & N. Entwistle, (Eds.), *The experience of learning* (pp. 39-58). Scottish Academic Press.

Mastrokoukou, S., Kaliris, A., Donche, V., Chauliac, M., Karagiannopoulou, E., Christodoulides, P. & Longobardi, C. (2022). Rediscovering teaching in university: A scoping review of teacher effectiveness in higher education. *Frontiers in Education*. 7:861458. doi: 10.3389/feduc.2022.861458

Matthewman, L.J., Jodhan-Gall, D., Nowlan, J., O'Sullivan, N. & Patel, Z. (2018). Primed, prepped and primped: Reflections on enhancing student wellbeing in tertiary education. *Psychology Teaching Review, 24* (1), 67-76.

Mazur, E. (2009). 'Farewell lecture?', *Science,* 323, 50-51.

Merriam, S. (2017). *Invited article: Adult learning theory: Evolution and future directions*. PAACE Journal of Lifelong Learning, Vol.26, 21-37.

Meyer, A., Rose, D.H., & Gordon. D. (2014). *Universal design for learning: Theory and practice*. CAST Professional Publishing.

Meyer, J., & Land, R. (2003). Threshold concepts and troublesome knowledge: Linkages to ways of thinking and practising within the disciplines. In C. Rust, (Ed.), *Improving student learning - Theory and practice ten years on* (pp. 412-424). University of Edinburgh.

Mezirow, J. (1997) Transformative learning: Theory to practice. *New directions for adult and continuing education,* 74, 5-12. http://dx.doi.org/10.1002/ace.7401

Mezirow, J. (2000). Learning to think like an adult: Core concepts of transformation theory. In J. Mezirow & Associates (Eds.), *Learning as transformation: Critical perspectives on a theory in progress* (pp. 3-33). Jossey-Bass.

Mezirow, J. (2018). Transformative learning theory. In K. Illeris (Ed.), *Contemporary theories of learning: Learning theorists ... in their own words* (pp. 114–128). Routledge.

Mills, J. (2002). An unorthodox pedagogy: Fostering empathy through provocation. In J. Mills (Ed.), *A pedagogy of becoming* (pp. 115-140). Rodopi.

Moore, M. G. (2019). The theory of transactional distance. In M. G. Moore & W. C. Diehl (Eds.), *Handbook of distance education* (4th ed., pp. 32-46). Routledge.

Natriello, G. (2005). Modest changes, revolutionary possibilities: Distance learning and the future of education. *Teachers College Record, 107(8),* 1885-1904. https://doi.org/10.1111/j.1467-9620.2005.00545.x

New Zealand Council for Educational Research (2004). *Critical success factors and effective pedagogy for e-learning in tertiary education.* Wellington.

Ngawati, M. (2021). *Huakina ngā tatau o tōku whare: Creating a Kaupapa Māori secondary tertiary pathway.* Toi Ohomai Institute of Technology. Published by Ako Aotearoa. New Zealand. Retrieved 27 February 2023 from https://ako.ac.nz/knowledge-centre/huakina-nga-tatau-o-toku-whare-creating-a-kaupapa-maori-secondary-tertiary-pathway-for-maori-medium-students/

Okazawa-Rey, M. (1998). Educating for critical practice. In E. Lee, D. Menkart & M. Okazawa-Rey (Eds.), *Beyond heroes and holidays: A practical guide to K-12 anti-racist, multicultural education and staff development* (pp. 19-25). Network of Educators on the Americas.

Palmer, P. J. (2017). *The courage to teach: Exploring the inner landscape of a teacher's life.* John Wiley & Sons.

Pelletier, K., McCormack, M., Reeves, J., Robert, J. & Arbino, N. (2022). *EDUCAUSE Horizon report, teaching and learning edition.* EDUCAUSE. Retrieved 23 February 2023 from https://library.educause.edu/-/media/files/library/2022/4/2022hrteachinglearning.pdf

Pere, R. (1982, 1994). *Ako: concepts and learning in the Māori tradition.* University of Waikato. Accessible at https://natlib-primo.hosted.exlibrisgroup.com/primo-explore/fulldisplay?vid=NLNZ&docid=NLNZ_ALMA21238151320002836&context=L&search_scope=NLNZ https://natlib.govt.nz/records/20844800

Phillips, R. A. (2005). Pedagogical, institutional and human factors influencing the widespread adoption of educational technology in higher education. In H. Goss (Ed.), *Balance, fidelity, mobility: Maintaining the momentum?* Proceedings of the 22nd ASCILITE conference Brisbane, 4-7 December 2005. Queensland University of Technology

Prosser, M. & Trigwell, K. (1999). *Understanding learning and teaching: The experience in higher education.* Society for Research into Higher Education & Open University Press.

Ramsden, P. (2003). *Learning to teach in higher education.* Routledge.

Ramsden, P., Margetson, D., Martin, E. and Clarke, S. (1995). *Recognising and rewarding good teaching in Australian higher education.* Committee for the Advancement of University Teaching, Australian Government Publishing Service.

Ranson, S. (1998). Towards the learning society. In S. Ranson (Ed.), *Inside the learning society* (pp. 91-108). Cassell.

Rātima, M.P., Smith, J.P., Macfarlane, A.H., Riki, N.M., Jones, K-L., & Davies, L.K. (2022) (Eds.). *Ngā hau e whā o Tāwhirimātea: Culturally responsive teaching and learning for the tertiary sector*. Canterbury University Press.

Sciascia, A. (2017). *Māori learner success in tertiary education: Highlights from Ako Aotearoa projects*. Ako Aotearoa (National Centre for Tertiary Teaching Excellence). Viewed 18 Nov 2022, https://ako.ac.nz/assets/Reports/Synthesis-reports/SYNTHESIS-REPORT-Maori-learner-success-in-tertiary-education-Highlights-from-Ako-Aotearoa-supported-research-projects.pdf

Seligman, M. (2011). Flourish: A Visionary New Understanding of Happiness and Well-being. Free Press, New York.

Shor, I. (1992). *Empowering education: Critical teaching for social change*. University of Chicago Press.

Smart, W. (2021). *The impact of COVID-19 on tertiary education in New Zealand: Initial impact on participation.* Ministry of Education.

Smith, G. (2000). Māori education: Revolution and transformative action. *Canadian Journal of Native Education*, *24*(1).

Smith, J.P., & Karaka-Clarke, T.H.R. (2022). Oranga tihei mauri ora! In M.T. Ratima, J.P. Smith, A.H. Macfarlane, N.M. Riki, K-L. Jones, & L.K. Davies, (Eds.), *Ngā hau e whā o Tāwhirimātea: Culturally responsive teaching and learning for the tertiary sector* (pp. 17-20). Canterbury University Press.

Tai, J., Ajjawi, R., Boud, D., & St Jorre, T.J. (2022). Promoting equity and social justice through assessment for inclusion. In J. Tai, R. Ajjawi, D. Boud, and T.J. St Jorre (Eds). *Assessment for inclusion in higher education: Promoting equity and social justice (pp. 9-18).* Routledge.

Tai, J., Ajjawi, R., & Umarova, A. (2021). How do students experience inclusive assessment? A critical review of contemporary literature. *International Journal of Inclusive Education.* https://doi.org/10.1080/13603116.2021.2011441.

Te Pūkenga: New Zealand Institute of Skills and Technology (2022). Whiria te ako explained. https://www.xn--tepkenga-szb.ac.nz/assets/Our-Pathway/ADI/Ako-framework/Whiria-Te-Ako-explained.pdf. Retrieved 27/2/23.

Te Pūkenga: New Zealand Institute of Skills and Technology (2021). *Insights and potential opportunities for enhancing success for all learners together with Māori learners*.

Te Wiata, I. (2016). *A guide for good teaching practice: Considering Māori students*. Te Mata o te Tau: Academy for Māori Research and Scholarship. Massey University.

Tennant, M. (2019). *Psychology and adult learning: The role of theory in informing practice.* Routledge. https://doi.org/10.4324/9780429023255

Trigwell, K., Prosser, M., and Waterhouse, F. (1999). Relations between teachers' approaches to teaching and students' approaches to learning. *Higher Education, 37, 57–70*. doi: 10.1023/A:1003548313194

Walker, C.T.R. (2022). Wellbeing in higher education: A student perspective. *Pastoral care in education,* 40:3, 310–320, DOI: 10.1080/02643944.2022.2093963

White, M. A., & Kern, M. L., (2018). Positive education: Learning and teaching for wellbeing and academic mastery. *International Journal of Wellbeing,* 8(1), 1–17. doi:10.5502/ijw.v8i1.588

Ako Aotearoa

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PO Box 756
Wellington 6140
0800 692 5669
info@ako.ac.nz
www.ako.ac.nz