

Towards building an Indigenous Science Tertiary Curriculum (Part 2)

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Te Koronga

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Abstracts

Ko te Koronga tētahi kaupapa mō te rangahau Māori kounga nei, e tū nei i Te Whare Wānanga o Ōtākou (<https://www.otago.ac.nz/te-koronga/index.html>). E rua ōna wāhanga: ko te Graduate Research Excellence tētahi, ko te Indigenous Science Research Theme tērā atu. I Aotearoa nei, e ai tonu i te Whare Wānanga o Ōtākou, he āputa nui e tohu nei me whakatipu ō te Māori pūkenga, ōna āheinga hoki, ā-rangahau nei, ki ngā pūtaiao. He tauira, i Ōtākou ko tōna 3% o ngā pouako katoa i te Division of Sciences he Māori, ka mutu, ehara i te mea ka rangahau ngā pouako Māori katoa i ngā take whakawhanake Māori. Mō Te Koronga, ko tō mātou whāinga matua ā-rautaki ko te whakatipu i te tokomaha o ngā pouako Māori e hāngai ai ki te taupori, me te aro kehokeho pū ki te whakapakarihia o te mātauranga me te pūkenga Māori. E tutuki ai ngā whāinga e pā ana ki te whakawhanakehanga Māori i tā Te Whare Wānanga o Ōtākou Māori Strategic Framework 2022 (MSF), ngā whāinga ā-kaupapa here o te motu, ka mutu ko ngā whāinga o te hapori Māori anō hoki, kua whakatauria e Te Koronga kia whakatipu i te hunga pouako Māori kia hāngai ki te taupori (ko tōna 15%), kia whakapakari hoki i te mātauranga me te pūkenga Māori i ngā pūtaiao. E whakatinanahia ai ēnei whāinga, e rua ngā rautaki e horaina nei: ko te waihanga mai i tētahi kaupapa matua hou mō te pūtaiao taketake, mō te mauri ora rānei, nō roto mai i te Division of Sciences ka tahi, me te whakawātea mai i ētahi tūranga mahi mauroa mō te pouako Māori ka rua. Ka aro pū tēnei tuhinga ki te rautaki tuatahi. Ko tēnei kaupapa matua hou mō te pūtaiao taketake: ka whakangungu i ngā atamai, Māori mai, Pākehā

mai hoki, ki ngā rohenga o te ('ngā' rānei) pūtaiao taketake; ka whakapakari i ngā āheinga ā-pouako puta noa i ngā momo akoranga mā roto mai i te waihanga o tētahi wāhi ake hou mō te whakaako i te pūtaiao taketake/mauri ora; ka waihanga i tētahi marautanga hou kaupapa Māori nei, ka aro tonu hoki ki ngā 'ōritehanga' o te mātauranga taketake me te whakaaro Pākehā; ka takoha atu ki ō te hāpori Māori hiahia, ki ōna wawata hoki mō ngā pūtaiao e whirinaki nei ki ngā hoahoatanga Māori o nāianei, ki ngā āheinga hou hoki ka puta, ka whakatutuki anō hoki i tā Te Hikina Whakatutuki rautaki ko Vision Mātauranga Policy, Diversity in Science, me ō Te Whare Wānanga o Ōtākou whāinga i te Māori Strategic Framework.

Te Koronga is a Māori research excellence kaupapa (mission) based at the University of Otago (<https://www.otago.ac.nz/te-koronga/index.html>). It is composed of two parts: Graduate Research Excellence and the Indigenous Science Research Theme. In New Zealand, there is a significant need to grow Māori research capability and capacity in sciences and particularly at the University of Otago. For example, at Otago approximately 3% of all academic staff in the Division of Sciences are Māori and not all Māori staff necessarily research on Māori development issues. For Te Koronga, our top strategic priority is to grow Māori academic staff numbers to population parity with a clear focus on building Māori expertise and capability. In order to meet the objectives related to Māori development for the University of Otago Māori Strategic Framework 2022 (MSF), as well as national policy goals, and importantly Māori community aspirations, Te Koronga has set an aim to increase Māori academic staff numbers to population parity (approximately 15%) and to increase Māori academic expertise and capability in sciences. To realise these aims, two strategies are offered: firstly, to create a new indigenous sciences or mauri ora (flourishing wellness) major within the Division of Sciences and secondly to create Māori academic tenure track positions. This paper will focus on the first strategy. A new major in indigenous science will: train Māori and non-Māori scholars in the fields of indigenous science(s); build staff capacity across the disciplines through creating a new dedicated teaching area of indigenous sciences/mauri ora; create new curriculum that is kaupapa Māori-led as well as at the 'interface' of indigenous scholarship and Western ways of thinking; contribute towards Māori community needs and aspirations in sciences that build on current Māori networks as well as new opportunities that emerge and will address Ministry of Business, Innovation and Employment's Vision Mātauranga Policy, Diversity in Science strategy and Otago University's Māori Strategic Framework goals.

Introduction

In this companion paper we focus on an Otago-based solution, which is the creation of a new postgraduate major of indigenous sciences in the Master of Science. The proposed pedagogies that can be drawn upon within the new major are described. The core kaupapa (underlying focus) of the previous paper was to highlight the systemic issues and realities of Māori academic staffing in sciences in Aotearoa (New Zealand), and this paper offers a solution that is locally based but may have implications for other institutions nationally and internationally.

An Otago-based solution: Towards an Indigenous Science Curriculum

A solution to grow Māori research capacity within sciences at the University of Otago is through a proposed indigenous sciences major at the postgraduate level. Currently this proposal is being socialised amongst academics and senior

leadership within the Division of Sciences. Indigenous science refers specifically to mātauranga (Māori knowledge; both what is known and how it is known (Jackson, Mita, & Hakopa 2017)) as a localised representation of indigenous knowledge. Of the 31 major offerings in the Bachelor of Science (<https://www.otago.ac.nz/courses/qualifications/bsc.html>) a quick search of the term Māori highlights one offering as a recommended paper. Of the 15 majors in the Bachelor of Applied Science there are two papers offered (<https://www.otago.ac.nz/courses/qualifications/bapps.html>). These papers are hosted in the School of Physical Education, Sport and Exercise Sciences taught in Te Koronga. Furthermore, there is a paper taught in the Department of Marine Science by Te Tiaki Mahinga Kai (<http://www.mahingakai.org.nz/>) and Te Koronga academics. Māori content is sprinkled throughout other papers such as in the School of Surveying. While there are aspirations for an increase in Māori content, there are limited meaningful opportunities for this to occur, as well as a lack of expertise for staff in academic positions to be able to teach the content, as highlighted in the various University of Otago strategic documents (University of Otago, 2017, 2018, 2019).

In Māori communities there are increasing concerns relating to environmental degradation, water, and their effects on hauora (health). Underlying these issues are the impacts on Māori knowledge systems, practices, and language (Jackson, Mita, & Hakopa 2017). We are not advocating to 'do away' with the disciplines of science, but rather to propose a way forward to create academic positions focused on indigenous science, in which the research and teaching activity is derived (a) from the importance of mātauranga (mātauranga-derived), (b) at the interface (mātauranga and the specific discipline), and (c) from areas which are not mātauranga-based but in which Māori have an interest. It is important to state here that Māori have an interest in all aspects of Te Tai Ao, The Natural World.

To understand the potential for indigenous science within the Western academy is to highlight how te ao Māori (a Māori world) is science. We suggest a working definition of science as 'learning through observation over time related to phenomenon'. We acknowledge that there are multiple ways to view science and the philosophy of science, but there is not scope in this paper to explore these in further detail. Mātauranga in action is based within a Māori worldview. Marsden (2003a) describes worldview as

the central systemisation of conceptions of reality to which members of its culture assent and from which stems their value system. The worldview lies at the very heart of the culture, touching, interacting with and strongly influencing every aspect of the culture (Marsden 2003a, p. 56).

We borrow the definition of mātauranga from Jackson, Mita, & Hakopa (2017), who contended that

mātauranga viewed in the context of Māori worldview, and the organising principles of whakapapa, whanaungatanga and kinship relationships, is both what is known... and how it is known. [They were] specifically interested in mātauranga in karakia (incantations), mōteatea (chants), pēpeha (tribal sayings), whakataukī (proverbs), and pūrākau (stories) (p. 10).

A way to understand science in a Māori world is through the different domains of the atua (deities). For example, in the separation of Ranginui (Sky Father) and Papatūānuku (Earth Mother) there were over 70 deities who held dominion over certain environments: Tangaroa (God of the ocean), Tāne (God of the forest, trees, and birds), Tāwhirimātea (God of the elements), Rūaumoko (God of earthquakes), Haumia-tike-tike (God of uncultivated foods), Rongomātāne (God of cultivated foods), to name a few. There are certain tikanga (protocols) within each domain to maintain the balance of tapu (restriction) and noa (unrestriction).

As humans were created, as junior in the whakapapa (genealogy) and then populated the world, they were tasked with ensuring the delicate balance between mana atua (mana of the gods), mana whenua (mana of land), mana moana (mana of the ocean), and mana tanagata (mana of people). Through physical creation, humans were imbued with the ira atua (godly essence) and ira tangata (human essence) (Jackson, Baxter, & Hakopa 2018). This meant that, through time, Māori held and continue to hold and practise localised knowledge from the gods, to the present as well as into the future. This, in an English word, is 'science'.

The previous sections have highlighted the opportunities and realities of Māori research capacity within the University of Otago. Many predecessors and current colleagues have offered solutions such as strategic planning, advocacy, letters, and hui at all levels of the institutions. To draw upon the defiant response by Ngāti Maniapoto leader Rewi Maniapoto in 1864 at the battle of Orakau and repeated by the late Professor Ranginui Walker, 'Ka whawhai tonu mātou'

or, translated for the purposes of this paper, 'We continue to fight' (Walker 2004). The reality is that, for our communities, the issues for local people are worsening and we are in a continual state of seeking mauri ora (flourishing wellness). The role of academics and universities is to be the critics and conscience of society; it is difficult to do so where the institutions do not reflect the society from which we may come and serve.

There are other issues which we do not have the space to discuss in detail, such as the growing number of Māori undergraduate students (McAllister *et al.* 2019) as a driver for the need for new curriculum areas and more Māori academics/academics with tikanga and Te Reo knowledge. Another significant issue we face is the notion of science excellence on the international stage versus what is needed to strengthen what is unique and excellent about New Zealand, i.e. strong indigenous research. Hiring faculty who understand the unique challenges and opportunities in New Zealand and celebrate the funding opportunities that follow that expertise, should be given higher priority – at least to balance the international reputation that currently exists.

Thus, we offer a further solution to realistically grow research capacity and capability within sciences whilst addressing issues of importance for Māori. We are not attempting to reproduce the *status quo*; otherwise we will create the same outcomes, which do not work. There are a few examples of Māori content across some of the mainstream institutions in New Zealand. Some of these courses are listed in Table 1.

Table 1. Examples of current papers related to Indigenous Science/Mauri Ora at New Zealand Universities.

University	Paper Code	Title
Otago	SPEX206	Te Pū o te Ora Māori Physical Education and Health
Otago	SPEX306	Te Pou o Te Koronga Advanced Māori Physical Education and Health
Otago	AQFI301	Field Methods for Assessment of Fisheries and Aquatic Habitats
Otago	MAOR 303	Ngāi Tahu and the Natural World
Canterbury	MAOR172-17S2	Science, Māori and Indigenous Knowledge
Lincoln	MAST319	Te Kaitiakitaka (Māori Environmental Management)
Lincoln	MAST603	Mana Kaitiaki (Māori Resource Management)
Victoria	MAOR202	Te Putaiao Māori/Māori Science
Victoria	MAOR203	Te Taunaha Whenua/Mapping Whenua
Victoria	MAOR302	Te Pumoto o te Tangata Whenua, o te Taiao/Indigenous Knowledge and Science
Massey	235.311	Māori Policy and Agribusiness
Massey	235.211	Māori Agribusiness Systems
Massey	235.701	Māori Values and Resource Management
Massey	235.702	Māori Resource and Environmental Management - Whenua
Massey	235.703	Māori Resource and Environmental Management - Freshwater
Massey	235.704	Māori Resource and Environmental Management - Flora and Fauna
Massey	235.705	Māori Resource and Environmental Management - Foreshore and Oceans
Massey	235.706	Maara kai - Traditional and Contemporary Māori Food Production
Massey	119.170	Māori Value Systems in Science
Massey	132.304	Tuhono Taiao: Māori and Planning
Waikato	GEOG515	Māori Geographies
Waikato	ENVP505	Māori Environmental Management
AUT	MAOH501	Māori Health, Development and Environment
AUT	MAOH701	Māori Health Promotion
AUT	MAOH801	Māori Health Research Practice - Te Rangahau Hauora Māori
AUT	MAOH802	Māori Health Practice - Taunga a Mahi Hauora Maori



Figure 1. Proposed Master of Science in Indigenous Science/Mauri Ora Version 1.0.

To provide an example within the current structure at the University of Otago, we propose to create a new major in indigenous science/mauri ora that has linkages with each School/Department within the Division of Sciences. This will be introduced at the postgraduate level, with a keen focus on the development of undergraduate curriculum in the future. We acknowledge findings from Kidman *et al.* (2015), who stated that:

‘the scientists in [their] study drew on examples from their own disciplines about how an understanding and awareness of Māori empirical knowledge about the natural world had provided them with particular insights into the knowledge base of their disciplines that were not immediately available to their colleagues in the sciences who assumed that indigenous knowledge was merely a ‘superstitious’ repetition of myths and legends’ (Kidman et al. 2015, p. 78).

At the centre of the curriculum design are indigenous science (IS) and Māori community aspirations. This would include offered papers that focused on Māori research methodologies, methods, and content related specifically to mātauranga as science. There would be opportunities for collaborations with Māori studies papers that include language, tikanga, and Treaty of Waitangi content. Many of the current papers in the sciences include field-based activities; as such, we would continue to privilege Māori field-work opportunities through papers such as AQFI301 Field Methods for Assessment of Fisheries and Aquatic Habitats, SPEX206 Te Pū o te Ora Māori Physical Education and Health, and SPEX306 Te Pou o Te Koronga Advanced Māori Physical Education and Health, which include noho marae (Jackson, Hakopa, & Jackson 2017).

The second, outer grouping, is a potential grouping of curriculum areas based on the Māori worldview and current needs in whānau, hapū, iwi, and Māori communities which are highlighted in Table 2.

Table 2. Proposed curriculum areas and focus for Master of Science in Indigenous Science/Mauri ora.

Curriculum area	Focus
Hauora	Tangata, wellbeing, mental health, nutrition, physical education, physical wellbeing, genetics, whakapapa
Tangaroa	Ocean and marine focus, fisheries management, aquaculture, climate change, marine mammals/creatures
Tāne	Flora and fauna, agriculture, terrestrial animals
Whenua	Land based, maunga, pā, wāhi tapu, outdoor education, surveying, management
Wai	Freshwater, freshwater species, environment, rivers/lakes, pollution
Management/economic/legal	Governance, economic futures, legal

The third, outermost grouping, is the specific department or school where there would be a possible curriculum alignment. There may be other alignments into the second grouping that reflect the broad scope of research within a department. This would provide a pathway for the creation of new academic positions, in which a staff member would teach one paper in the new indigenous science major and then teach a second paper based on their particular discipline. At Otago, a common teaching model for a fulltime academic staff member is a two-paper teaching model for the approximately 40% of time allocated to teaching. Thus,

new academics in these positions would still fulfil their 40% allocation, as well as contributing to a new major, and also undertake their research (40%) in relation to indigenous science and their specialised field. The further 20% is service, and this could include Māori development for example.

Through our Te Koronga-grown approach, this would create new academic positions in an area of significant importance locally, nationally, and internationally. There would be flow-on effects such as increasing quality postgraduate supervision, addressing issues for Māori communities, and creating linkages with other indigenous peoples internationally. In the next section, we discuss our proposed teaching pedagogies for the successful implementation of this new major.

A pedagogy for the implementation of a new curriculum

Three years of research has led to a model of Māori language revitalization in New Zealand, the ZePA model, which acronymises three critical positions, Zero – Passive – Active, and presents factors that enable or disable language maintenance and acquisition. The ZePA model is an approach towards language revitalization that extends beyond the people to whom the language belongs and raises the issue of a language being valued by the greater nation. Where language provides a foundation of identity, acknowledgement of the language catalyses Indigenous existence and, therefore, affords the delivery and receptivity of Indigenous knowledge within mainstream and Indigenous forums (T. Rewi & Rewi 2015, p. 136).

It is important to design the curriculum around a grounded pedagogy. This section will outline the pedagogical foundations of the proposal to provide context to the aspirations of the curriculum. In keeping with the language imperatives described above, the curriculum design and method of delivery within the new major would also need to reflect maatauranga Māori¹ and Indigenous knowledge relevant to the topics being taught. Māori Marsden (2003b) identified that maatauranga was learned in waananga and that from te kaakano, 'the seed of thought' came moohio 'ways of knowing' which gave us maatauranga 'knowledge' (p. 31–32). When we think about teaching, we acknowledge and identify that teaching is not only a complex, organic and experiential endeavour, but that the practice of teaching Māori students should, inherently, be based on applying experiences that reflect our Māori worldview. As Pihama et al. (2004) explain:

The complexity of Māori pedagogy is evident but...is not to be viewed, however, as limiting or restrictive. Rather it presents a multitude of possibilities for those that are willing and committed to bringing about positive change for Māori within education. What is clear is that there have always been a range of pedagogical forms that have been a part of Māori experience (Pihama et al. 2004, p. 53).

Clearly evident are the words of Bishop (1999) below, exemplifying how traditional research methodologies were once devoid of Māori cultural preferences, but a new indigenous sciences or mauri ora major developed by, and for

the advancement and benefit of, Māori students (and for that matter, all students) at the University of Otago, is long overdue. Bishop (1999) outlines

Traditional research epistemologies have developed methods of initiating research and accessing research participants that are located within the cultural preferences and practices of the Western world as opposed to that of Māori people themselves (Bishop 1999, p. 2).

Key ways of learning noted from participants in a study carried out by R.T. Rewi (2018) observed the following points:

Te Ako maa te Kite me te Whakarongo – Learning through Observing and Listening or Titiro, Whakarongo

This pedagogy is not a new practice within Māori, but reflects how knowledge was passed on from our tuupuna (ancestors) before us (Best 1923; Metge 2015; P. Rewi 2010; Whatahoro & Smith 1913). Moreover, other indigenous people of the Pacific and elsewhere have also been known to use similar pedagogy to transmit their cultural knowledge inter-generationally. Robert Borofsky, who studied the techniques Pukapukans used to acquire traditional knowledge, gives one such example (Borofsky 1987). Pukapuka is one of the fifteen islands that make up the group known collectively as the Cook Islands. In this example, Borofsky (1987) used an illustration of canoe lashing to describe how observation as pedagogy was used to pass on traditional knowledge from an elder to two students. Borofsky (1987) had spoken with both parties the day before and understood they both had the same expectations, that the elder would teach the students how to make and then lash the old-fashioned canoes. From what Borofsky (1987) observed, there was actually very little direct teaching involved. The elder rarely gave explicit instructions about what to do and, in Borofsky's (1987) opinion, the students learned more from the practical work they did, and from their own intuition about what to do and observing, rather than any actual advice or instruction from the elder.

Learning by exposure / Learning by part of living (Metge 2015)

A distinction that is important to note here, and commented on by all of the participants in the Rewi (2018) study, was the important learning that came naturally to them as part of their daily lives at home and growing up at the marae, particularly for those who also came from rural, Māori communities. Metge (2015) describes in her book, *Tauira, Māori methods of learning and teaching*, how the reflections of her participants rated their childhood learning in their homes and at the marae as the most important kind of learning they experienced. The marae was also the other place most of their learning outside school occurred. For some, this was the only place learning occurred. Metge (2015) originally called this phenomenon 'learning by exposure' before renaming it 'learning as part of living'. Her participants took this learning for granted and did not perceive it needed to be named.

Metge's (2015) description of this mode of learning, taken from participants who were children in the mid-twentieth century, helped T. Rewi appreciate what her own pakeke

¹ This section utilises the Waikato dialect of double vowel sounds.

(adults/senior family members) were saying to her when she first approached them to participate in her project. They kept saying they had nothing to offer when she first approached them to participate in this project – they had no special names for any types of learning they did. Like Metge's (2015) participants, they took their learning for granted. They simply learned what they had to do and went on their way. They either understood something or they did not. If they did not understand, then the person would be shown again. Whether this happened would depend on their tutor's patience and commitment to teaching the student. If the student still did not understand, then it was likely they had missed their opportunity and would have to move on. Rewi recalled her father or her uncle commenting, *Only the mentally fit and the tough survive. Listen carefully, watch what I'm doing, I'll only show you once.*

Role modelling

People often base their own practice on the actions of someone else they hold in high esteem, someone they trust and respect deeply. No matter whether acting in a personal or professional capacity, most of the time a person's actions emulate those of an individual admired for their ways of being, their demeanour and actions when in the same position. This learned behaviour could have been acquired in this way through role modelling. Cruess *et al.* (2008) wrote about role modelling in their field, the medical profession, stating that 'Teachers need to be aware of the conscious and unconscious components of learning from role modelling, so that the net effect of the process is positive' (p. 718). The key points they note from their research into role modelling are:

Role modelling is a powerful teaching tool for passing on the knowledge, skills, and values of the medical profession, but its net effect on the behaviour of students is often negative rather than positive ... By analysing their own performance as role models, individuals can improve their personal performance ... Strategies are available to help doctors become better role models (Cruess et al., 2008, p. 721).

Other important considerations from a Western context include:

Contextualising learning

Some people now believe that learning a language is building a map of meaning in the mind. These people believe that talking may indicate that the language was learned, but they do not believe that practice in talking is the best way to build up this 'cognitive' map in the mind. To do this, they feel, the best method is to practice meaningful listening (Norton in Nation, 1993, p. 11).

Nation (1993) continues the discussion by way of explaining that meaningful listening is not having to understand each word in isolation, but rather the need to make sense of the entire message. Therefore, messages must be interesting and involve the learners so that listening becomes a 'truly active process' (p.11). Vandenbosch (2007) elaborates further by saying that: 'contextualisation of learning occurs when the content of the curriculum, and the methods and materials associated with it, are related directly to the experience and environment of the learner'

(p. 2). The example given here demonstrates that the aim of contextualising language is to help learners notice and understand meaning. This is an active process in which the learner is actively creating the context rather than just passively registering the context. Similarly, with the new major, contextualising learning is critical to the success of the programme and exemplifies how the environment and experience, not just the content, contribute to successful outcomes for the learner and are a critical part of the learning experience.

Experiential learning

Beard and Wilson (2006) report experiential learning as 'the insight gained through the conscious or unconscious internalization of our own or observed experiences, which builds upon our past experiences or knowledge' (p. 43). This is quite similar to observing and listening, and also to learning by exposure or learning as part of living, but it is also different. It can be described simply as learning whilst experiencing, another critical learning style synonymous with a Māori worldview. Classrooms or learning situations that provide opportunities for experiential learning create direct interactions with the study focus itself deliberately, instead of abstract presentations. Kohonen (2003) supports how learning is viewed as 'a cyclic process integrating immediate experience, reflection, abstract conceptualization and action' (p. 14). From a language perspective, for example, Kohonen (2003) justifies the inclusion of experiential language learning as part of cooperative learner education within language programmes, as learners are provided with activities that encourage the use of real-life language where there are relevant or significant reasons for the communicative activities. Within a wānanga programme, for instance, experiential language learning examples could be intentionally co-planned for, so that both students and teachers maximise the wānanga environment. This style of learning could be easily incorporated within the new major.

The physical environment

Already experiencing success in connecting with community for some programmes (for example within the School of Physical Education, Sport and Exercise Sciences), Kyle & Murray (2008) point out that the physical environment is a key factor in building quality learning situations:

There are many factors that affect the integrity of the learning environment ... the learning environment is a complex but critical educational construction borne of essentially three components: the physical, actions and resources of the teachers as well as the response of the learners (Kyle & Murray 2008, p. 154).

Van Lier (2004) takes a socio-cultural perspective and provides many examples of ways in which 'the physical world...has a number of obvious and not so obvious connections with language use, and the ties between word and world are deep and numerous' (p. 46). This acknowledges the fact that the physical environment is fundamental to the language development of the people and cultures that exist within that environment. Flaherty in Brucato (2005) provides a good summary of the need for educators to focus on creating optimal environments, explaining how:

human beings are affected by their heredity and their environment. The former is beyond the scope of even the most determined theorist. It is, therefore, in the latter area that educators can do the most to provide the best possible start in life to those entrusted to them (Van Lier 2004, p. vii).

The quotations listed here may only focus on language, but from a Māori worldview, language and tikanga are synonymous, so speaking of one invariably describes the benefits for both. From a curriculum perspective, the new indigenous science or mauri ora major is significantly enhanced from working with community where relationships forged are more likely to outlast the years the students are enrolled at the university.

Conclusion

In this paper, we have focused specifically on our own university through highlighting a potential solution. This solution is the introduction of a new major of indigenous science/mauri ora in the Master of Science. We also discussed the pedagogical approaches that we would draw upon for this major to be a success. The solution we have provided is Otago-focused and, although it is locally created based on our specific needs, it may have applications for others nationally and internationally.

Tēnei anō tātou te koronga

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