

## RESEARCH ARTICLE OPEN ACCESS

# Extending Māori Concepts in Secondary School Geography

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## ABSTRACT

Secondary school geography brings together tāngata (people) and whenua (land), the central concepts of te ao Māori (the Māori world). Therefore, geography is ideally placed to respond to calls for mātauranga Māori (Māori knowledge) to gain “equal status” with Western knowledge. This article reports how 47 teachers integrated Māori concepts into secondary school geography. Data were collected using an online questionnaire and analysed through content analysis and reflexive thematic analysis. The research identified a range of geography-related Māori concepts. The findings suggest that including more conceptual mātauranga Māori, especially in physical geography, would help achieve “equal status for mātauranga Māori”.

## 1 | Introduction

In Aotearoa New Zealand, Indigenous knowledge is known as mātauranga Māori. Roberts (Ngāti Apakura, Ngāti Hikairo<sup>1</sup>; 2012) defined mātauranga as “a generic term for knowledge of the visible and invisible world of Māori as encountered on a daily basis” (p. 37). Mātauranga Māori encompasses all Māori knowledge (Royal [Marutūahu, Ngāti Raukawa, Ngāpuhi] 2007) of the past, present and future (Mead [Ngāti Awa, Ngāti Tūwharetoa, Tūhourangi] 2022). Additionally, Curtis (Ngāti Pikiao, Ngāti Rongomai; 2005, as cited in Macfarlane [Ngāti Whakaue, Ngāti Rangiwewehi], Macfarlane [Ngāi Tahu; Ngāti Waewae], and Curtis 2019) differentiated it into original knowledge from Hawaiki, traditional knowledge that evolved in Aotearoa New Zealand, and contemporary knowledge. Development of new mātauranga Māori by Māori elders, experts, professionals, academics and scientists (Muru-Lanning [Waikato, Ngāti Maniapoto, Ngāti Whātua] 2012) continues to occur over time and through interactions with the environment, colonisation (Royal 2007), work and publications (Mead 2013). Stewart (Ngāpuhi-nui-tonu; 2021) proposed that mātauranga Māori includes a variety of knowledge types: language, values, facts, metaphors, narratives and perspectives. Harmsworth (Te Arawa, Ngāti Tūwharetoa, Ngāti Raukawa) and Awatere (Ngāti Porou; 2013) supported that values are central in te ao Māori.

However, some forms of knowledge are appropriate for the general population to learn, while other knowledge is appropriate for chosen people only (Royal 2003). Given mātauranga Māori encompasses generational knowledge of a variety of types that continue to be developed, it is imperative for geography teachers to seek a wide range of mātauranga Māori to include in curricula and understand they cannot know everything about te ao Māori (Hoskins [Ngāti Hau, Ngāpuhi] and Jones 2022; Royal 2003).

Mātauranga Māori incorporates a variety of knowledges that, in a Western context, would be separated into fields. Mead (2013) suggested these fields may include: “philosophy, astronomy, mathematics, language, history, education and so on. And it will also include subjects we have not yet heard about” (p. 427). Furthermore, due to its integrated holistic nature, mātauranga Māori does not adhere to Western disciplinary boundaries (Stewart 2020), such as geography, or sub-disciplines such as physical and human geography. Therefore, geography teachers need to go beyond traditional disciplinary boundaries when seeking mātauranga Māori about place and environment for their curricula.

A recent change to education in Aotearoa New Zealand is mana ōrite mō te mātauranga Māori (equal status for mātauranga Māori). It proposes strengthening the National Certificate in

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Educational Achievement (NCEA) through respecting and integrating mātauranga Māori equally with Western knowledge within mainstream secondary school subjects, such as geography (Ministry of Education 2023). Stewart (2025) explained that *mana ōrite* means respecting mātauranga Māori within curricula in an attempt to address its omission. Ensuring equal status for mātauranga Māori is key to achieving a future based on a Tiriti partnership and supporting teachers to meet the professional standard of Te Tiriti o Waitangi partnership (Education Council New Zealand 2017; Teaching Council of Aotearoa New Zealand 2025). However, bringing mātauranga Māori into curricula and ensuring mātauranga Māori has equal status with Western knowledge in geography may challenge teachers' understanding of geography. Limited guidance is provided for teachers about the mātauranga Māori that is relevant for geography, with only a brief general toolkit (Ministry of Education 2023) and 19 Māori concepts for geography provided by the Ministry of Education (2013).

Recent literature suggests some ways teachers might integrate mātauranga Māori into secondary school curricula. Karaka-Clarke (Te Arawa, Ngāi Tahu), Bell (Ngāti Porou, Te Whānau-ā-Apanui), Eddy, Kennedy-Benns (Ngāti Hauiti, Ngāti Kahungunu ki Wairoa), Robertson, and Schrader Manuera (Te Aupōuri; 2022) outlined mātauranga Māori that could support teaching secondary school languages, social sciences, English and science, and Stewart and Tedoldi (2021) unpacked *taiao* (environment), *mauri* (essence, life force ethos, life principle) and *whakapapa* (genealogy, lineage, layers) within NCEA science. As secondary school geography brings together the central concepts of *te ao Māori*, *tāngata* and *whenua*, geography may be ideally placed to respond to the call for *mana ōrite*. However, there has been no research on how geography teachers might engage with mātauranga Māori, and this study aimed to address the research gap.

This study investigated how geography teachers integrated mātauranga Māori, especially Māori concepts, into their local curricula. The research question was: What is mātauranga Māori for geography, and how do geography teachers integrate mātauranga Māori into their curricula and teaching? The findings identified a range of Māori concepts used by teachers, ways teachers navigated between Māori and Western geographic concepts and how they moved from teaching general mātauranga Māori, such as terms for understanding Māori society, to more specific mātauranga Māori, such as concepts for understanding environments. The research aimed to support geography teachers, particularly those who are non-Māori like the first author, to extend the mātauranga Māori concepts applied within secondary school geography.

## 2 | Reimagining the Geography Curriculum

Aotearoa New Zealand's secondary school geography curriculum is mainly based on Western knowledge, with limited inclusion of mātauranga Māori. *The New Zealand Curriculum* (Ministry of Education 2007) sets out a brief secondary school geography curriculum, which gives teachers high autonomy over local curricula and content. For 30 years, the Aotearoa New Zealand secondary school geography curriculum and

assessment have included some mātauranga Māori. In the late 1990s, a set of "Māori geography unit standards" was developed, but they operated separately to the Western geography curriculum and assessment (New Zealand Board of Geography Teachers 1999). With the move to NCEA in the early 2000s, Māori perspectives were included in some geography achievement standards (Bliss 2005), a glossary of Māori concepts for geography (Ministry of Education 2013) was made available and the application of some Māori concepts was assessed through NCEA examinations. However, the inclusion of Māori perspectives and concepts was through an additive approach (Banks 2009) rather than aiming for equal status between the knowledges.

The NCEA review of the early 2020s aimed to strengthen NCEA through equal status for mātauranga Māori, known as *mana ōrite mō te mātauranga Māori*, within secondary school subjects such as geography (Ministry of Education 2023). *Mana ōrite* is a metaphor for partnership between peoples that expresses the relational intent within Te Tiriti o Waitangi (Berryman [Ngāi Tūhoe, Ngāti Awa, Ngāti Whare], Lawrence, and Lamont 2018). According to Stewart (2025), *mana ōrite* is best understood as respecting mātauranga Māori in an attempt to address the exclusion of mātauranga Māori from curricula. In addition, *te ao Māori* and mātauranga Māori were incorporated into changes to NCEA Level 1 geography (Ministry of Education 2023). As the *New Zealand Curriculum* (Ministry of Education 2007) and NCEA provide frameworks but not specific details for what is taught, the change to NCEA required all teachers to invest effort in curriculum development.

The requirement to integrate *te ao Māori* and mātauranga Māori into curricula may challenge teachers' understanding of geography. In Aotearoa New Zealand, only 14% of secondary school teachers are Māori, whereas 71% are Pākehā (Non-Māori of European descent; Ministry of Education 2022). Furthermore, because secondary school geography teachers need a university degree, most Aotearoa New Zealand teachers are likely to have learned geography from a Western academic perspective rather than learning mātauranga Māori. As a result, many geography teachers may not understand mātauranga Māori related to geography. Therefore, ensuring mātauranga Māori has equal status may require teachers to revise their understanding of geography, which could challenge their taken-for-granted beliefs, worldviews and positionality.

### 2.1 | Indigenising Geography Curricula

Indigenising geography and broadening content beyond Western geographic knowledge to include Indigenous knowledges is a topic of interest in the literature. Curriculum indigenisation normalises Indigenous ways of knowing and being, decentres colonisers and moves from critique into possibility (Hoskins and Jones 2022). According to Higgins (Tūhoe) and Rewi (Ngāti Manawa, Tūhoe, Te Arawa, Ngāti Whare, Tūwharetoa; 2014), the normalisation of Indigenous language practices would require the whole of society to participate because regular use affirms the value and status of *te reo Māori* (Māori language). Therefore, normalising Indigenous ways and indigenising geography would require reorienting not just the knowledge taught

but the entire geography education system (Finn, Turner-Adams [Ngāti Ranginui], & Webber [Ngāpuhi, Ngāti Whakaue] 2026).

Within geography, greater indigenisation and decolonisation are seen in human and environmental geographies, which encompass a variety of perspectives, while geoscience remains embedded in Western science (Radcliffe 2022). Differing assumptions about knowledge may influence the uneven decolonisation of geography's sub-disciplines. Western geography epistemologies are situated in a Cartesian dualism (Grosfoguel 2012), which separates culture/cultural from nature/natural (Roberts 2012) and adheres to positivism's assumptions of objectivity, universality (Grosfoguel 2012) and an absolutist view of knowledge (Young et al. 2014). However, because the philosophical assumptions underlying curricula are rarely made explicit, teachers might not be aware of their assumptions about subject epistemology (Stewart 2017; Taylor 2019). Assuming that physical geography knowledge is singular knowledge, similar to assumptions about Western science, may mean physical geography is less likely to be indigenised (Radcliffe 2022). In contrast, human geography seeks breadth of perspectives, suggesting it may be more open to indigenous perspectives. Additionally, working with unfamiliar knowledge systems, such as mātauranga Māori, may challenge what teachers learned previously, understand about knowledge and hold as core values (Radcliffe and Radhuber 2020).

Some approaches to indigenising geography curricula have been offered within the literature. Nayeri and Rushton (2022) suggested that school geography curricula could be reconstructed by adding missing knowledge. In contrast, Radcliffe (2022) encouraged broadening knowledge to include and dialogue with plural knowledges but did not suggest what to do. Alternatively, many scholars, especially those from settler-colonial contexts, advocated that Indigenous knowledges, which have long been missing, should be included in geography curricula (de Leeuw and Hunt [Kwagu'i] 2018; Hurt and Wallace 2005; Nursey-Bray 2019). de Leeuw and Hunt (2018) argued that for decolonisation to happen, Indigenous ways, sovereignty and futures need to be centred. Ensuring Indigenous knowledges have equity with Western geographic knowledge was recommended by Nursey-Bray's (2019) Indigenous reference group and aligns with mana ōrite mō te mātauranga Māori in the NCEA changes (Ministry of Education 2023). In addition, Hurt and Wallace (2005) focused on subject-specific Indigenous knowledges, suggesting that indigenisation of geographic knowledge needs to move from stereotypical and generic to curriculum area specific.

## 2.2 | Bringing Mātauranga Māori Into School Curricula

The literature has highlighted some ways that mātauranga Māori has been used in Aotearoa New Zealand school curriculum areas, including social sciences, science, mathematics, English and languages. Although no one has researched integration of mātauranga Māori to secondary school geography, Karaka-Clarke et al. (2022) suggested ways the social studies Place and Environment strand (Ministry of Education 2007) could explore kaitiakitanga (guardianship and sustainability according to iwi/tribe or group values) for water, tūrangawaewae

(the place where one has the ancestral right to stand) and Te Tiriti o Waitangi. In science, Stewart and Tedoldi (2021) applied the specific mātauranga concepts taiao, mauri and whakapapa, while Karaka-Clarke et al. (2022) suggested teaching about restoring mauri in ecosystems, celestial navigation, maramataka (lunar calendars) and manu aute (kites). Saha, Tapuke (Te Atiawa, Ngāti Tama, Ngāti Mutunga, Ngāi Tai, Ngāi Tai ki Tāmaki, Ngāti Porou, Te Whānau-ā-Apanui, Te Aitanga a Mahaki, Ngāi Tūhoe, Te Whakatōhea, Ngāi Tahu, Ngāti Maniapoto, Ngāti Raukawa, Toa Rangatira), Tapuke (Tūhoe, Ngāti Hineuru, Tūwharetoa, Ngāti Raukawa ki te Tonga, Samoan), Kennedy, Tolbert, and Macfarlane (2024) applied He Awa Whiria approach to braid mātauranga Māori and Western knowledges when teaching about volcanism. Researchers also applied mātauranga Māori to mathematics through applications of waiata (song; Ingram and Curtis [Kāi Tahu, Kāti Māmoe, Waitaha, Ngāti Kahungunu] 2022) and uruuru ao (narrative for wayfinding between landmasses) and uruuru whenua (narrative for wayfinding within a landmass; Trinick [Te Whānau-ā-Apanui] and Allen [Ngāti Kahungunu, Ngāti Hinemanu, Ngā Wairiki Ngāti Apa] 2023). Furthermore, mātauranga Māori could support teaching English and languages through investigating oratory skills and structures of languages and texts (Karaka-Clarke et al. 2022). There are many ways that geography could learn from these mātauranga Māori applications in other learning areas.

Research into the general use of mātauranga Māori in school also suggests possible directions for geography. When researching how five schools incorporated mātauranga Māori into curricula, Glassey (Te Āti Haunui a Pāpārangi), Swinburn, Haerewa (Ngāti Porou), McKelvie-Sebileau, Chote, and Tipene-Leach (Ngāti Kere, Ngāti Manuhiri; 2023) found that te ao Māori values such as manaakitanga (hospitality, showing care for others) were key to learning mātauranga Māori. Similarly to the mathematics example by Ingram and Curtis (2022), Glassey et al. (2023) also found learning from waiata, as well as pūrākau (narratives), Ātea a Rangi (the name of a navigation training ground that has a star compass) and teachers using te reo Māori, all of which are relevant for geography. Furthermore, Karaka-Clarke et al. (2022) recommended moving beyond the currently common approach of adding a karakia (prayer, incantation), waiata or whakataukī (proverbial saying of a tupuna) to the start of a lesson to teaching with mātauranga Māori. Perhaps connecting general mātauranga Māori to place through mātauranga-ā-iwi (knowledge specific to a kinship group) might strengthen the geography links.

Movement from teaching general mātauranga Māori to locally specific mātauranga-ā-iwi is also important in the literature. Glassey et al. (2023) found mātauranga-ā-iwi was central to the approach of the schools in their study, which was similarly found by Doherty (Tūhoe; 2009), who emphasised that the local basis of mātauranga-ā-iwi is essential for Māori educational success. These mātauranga-ā-iwi findings support Penetito's (Tainui-Ngāti Hauā, Ngāti Tamaterā, Ngāti Raukawa; 2010) assertion that whānau (families), hapū (primary kinship group, subtribe) and iwi should decide the mātauranga Māori to bring into curriculum based upon their aspirations for their young people. As geography values place as a central concept, mātauranga-ā-iwi may be an important curriculum inclusion. While geography

could learn from the ways mātauranga Māori has been applied in schools, there is a gap in the research about how mātauranga Māori can be engaged with in school geography.

### 2.3 | Translating Subject Terms Into Te Reo Māori

Translating words, particularly key terms, into te reo Māori can be another act of decolonisation. As an official language of Aotearoa New Zealand, te reo Māori should be present in all classrooms (Stewart 2023) and literature encourages non-Māori teachers to learn te reo Māori (Hoskins and Jones 2022; Karaka-Clarke et al. 2021; Stokes 1987). Furthermore, education policy requires teachers to develop their use of te reo Māori so ākonga Māori can see themselves in their learning (Education Council New Zealand 2017; Teaching Council of Aotearoa New Zealand 2025). Although translating terms is well established in the Aotearoa New Zealand education system, Hetaraka (Ngāti Wai, Ngāti Tahu, Ngā Puhī, Ngāti Paoa; 2019) critiqued educational policies, such as *Tātaiako* (Ministry of Education and New Zealand Teachers Council 2011), for misusing the Māori language words *wānanga* (a place of sacred and traditional learning, to dialogue, to discuss) and *ako* (reciprocal teaching and learning). Additionally, Mika (Tūhourangi) and Stewart (2017) have critiqued government policy for reducing the word *whānau* to family and removing its ontological understandings. According to Mika (2019), te reo Māori is “at once world and a describer of the world” (p. 546). Therefore, kupu Māori (Māori language words) need to be understood within a te ao Māori framing. Substituting English terms with kupu Māori separates the kupu Māori from their meaning in te ao Māori. Moreover, simply translating words into te reo Māori does not support the indigenisation of knowledges but rather creates issues related to power, culture and colonisation (Jackson [Ngāti Kahungunu, Rongomaiwahine, Ngāti Porou] 2016; Mika and Stewart 2017; Stewart 2017), the very issues decolonisation aims to address. Substituting kupu Māori with English words is a form of linguistic racism that sees language as only communicative, ignoring language’s identity roles (May 2023) and suggesting that some teachers may not understand how language within te ao Māori differs from language in the West (Mika 2019).

### 2.4 | Indigenising Geographic Concepts

The centrality of concepts in secondary school geography (Milligan et al. 2015; Taylor 2019) implies that indigenising concepts would help to prioritise Indigenous knowledges. Concepts are big ideas that are transferrable (Taylor 2019). Geographic concepts support ākonga to think about the world in new ways, analyse or explain the world (Taylor 2019; Young et al. 2014). Therefore, decolonising and indigenising geography would reconsider geographic concepts.

However, if decolonising geography only engages with Indigenous knowledges within Western geographic concepts (Radcliffe 2022), it risks detaching holistic knowledge from its ontology (Mika 2019; Mika and Stewart 2017) and remaining within colonial epistemology. The literature suggests addressing central Western geography concepts with a decolonising lens to broaden their definitions (Oliveira, Te Maro [Ngāti Porou], and

Tweed 2024; Ormond 2025; Radcliffe 2022). Radcliffe (2022) advocated delinking from Western concepts to add new concepts and including the concept of a “pluriverse”. She suggested that including the Māori concept of *wā* (space, time) would connect space to time and people to ancestors and descendants. However, Indigenous concepts should be context-specific and added cautiously to avoid appropriation of Indigenous knowledge. Radcliffe argued that a pluriverse acknowledges race and respects Indigenous knowledge, addressing the universalisation and appropriation critiques of her approach. She suggested that the twofold approach would help to understand the world through plural frameworks and in more inclusive ways. Because of the centrality of concepts to geography (Milligan et al. 2015; Taylor 2019), decolonising concepts is a better approach than decolonising content (Oliveira et al. 2024); however, concepts need to be decolonised in context-specific ways.

Māori concepts may support the context-specific indigenisation of geography. Stokes (1987) suggested that concepts like *rangatiratanga* (authority, chieftainship) and *ahikā* (long burning fires, signifying continuous occupation), which have a geographic nature, may be relevant for “Māori geography.” Additionally, Ormond (2025) indicated that Māori concepts are a decolonising feature of the NCEA changes, while Harmsworth and Awatere (2013) explained that values are central in te ao Māori, which may help to establish concepts. However, teachers need to consider subject epistemology and assumptions about knowledge when selecting Māori concepts for use in curricula, because within the relational Māori ontology, how one thing is represented has implications for everything (Mika and Stewart 2017; Stewart and Tedoldi 2021). If applied cautiously, decolonising concepts appears a useful approach.

Intersecting the literature about indigenising geography curricula with research into other curriculum areas’ inclusion of mātauranga Māori suggests geography could be indigenised through the integration of Māori concepts. However, there is a gap in research into the application of mātauranga Māori in secondary school geography. This research sought to address this research gap by investigating how teachers integrated mātauranga Māori into geography and what mātauranga Māori was taught. In doing so, the research aimed to support teachers, particularly those who are non-Māori, to further develop their curricula.

## 3 | Method

This study was the initial exploratory study in a larger project investigating how teachers decolonised and indigenised geography (Finn 2025). This research investigated Aotearoa New Zealand teachers’ engagement with mātauranga Māori in geography and utilised a decolonising methodology that centred participants (Smith 2021). The research question was: What is mātauranga Māori for geography, and how do geography teachers integrate mātauranga Māori into their curricula and teaching?

### 3.1 | Participants

Purposive sampling was used to recruit 47 geography teacher participants. Familiarity with ongoing changes to secondary

school geography was necessary, so participants were teachers or school leaders who taught NCEA geography. Table 1 displays the participant demographics. The ethnic groups represented were Māori (13%), Pākehā (91%), Pacific (4%), African (2%) and Other European (2%). The gender breakdown was nearly even, with 55% identifying as female and 45% as male. Most participants (74%) had more than ten years' teaching experience, 13% had 5–10 years' experience, 9% had 2–5 years' experience, and the remaining 4% had 1–2 years' experience. Teachers from around Aotearoa New Zealand participated, with the most teachers from Tāmaki Makaurau/Auckland (36%), Te Whanganui-a-Tara/Wellington (17%), Waitaha/Canterbury (11%) and Te Tai Tokerau/Northland (9%). However, Te Tai Rāwhiti/Gisborne, Te Tai-a-Aorere/Tasman, Te Taihū-o-te-waka/Marlborough and Murihiku/Southland participants were not represented in the study.

### 3.2 | Procedures

Data were collected using the Qualtrics online questionnaire platform between July and October 2022. The research coincided with the NCEA Level 1 mini pilot, when most teachers were thinking about or planning for NCEA and curriculum changes (Alansari et al. 2022). Use of an online questionnaire aligned with the decolonising methodology by prioritising the teachers' interests over those of the researchers. Being online honoured participants' time and enabled them to select when and where to complete the questions (Gillham 2007). The survey questions are found in Table 2. Furthermore, the online Qualtrics platform ensured participant anonymity.

Participants were recruited by email and through social media. The Board of Geography Teachers kaiārahi (mentor, guide) and regional geography teacher associations emailed their members an advertisement. Publicly available school geography department email addresses and posts in geography teacher social media groups were also used to invite teachers.

Informed and voluntary consent was given by participants. Ethical approval was obtained through the University of Auckland Human Participants Ethics Committee (Reference UAHPEC24674). Potential participants accessed Qualtrics via a link where they encountered the participant information followed by the questionnaire. Those who did not want to participate could exit the questionnaire before they submitted the form. Final submission indicated consent for participation. Participants completed the questionnaire anonymously and provided data about gender, ethnicity, geographic region, and teaching experience, which were used for developing the coding scheme. Table 1 displays the participant coding scheme. For example, a participant with the code (f-PE-TM) means that this is a teacher who identifies as female and Pākehā and works in the Tāmaki Makaurau/Auckland region.

The data were analysed through content analysis and reflexive thematic analysis. The initial content analysis was undertaken using word frequency searches in NVivo Release 1. The iterative stages of reflexive thematic analysis followed, including familiarisation; coding in NVivo; initial theme generation; theme development and review; theme defining, refining and naming; writing up and renaming; and reflexivity (Braun and

**TABLE 1** | Participants' demographic breakdown and codes.

Demographic category	Study participants		
	Number of teachers	%	Code
Gender			
Female	26	55	f
Male	21	45	m
Ethnicities teachers identify with (could choose multiple)			
Māori	6	13	M
Pākehā/European	43	91	PE
Other/European	2	4	OE
Pacific	2	4	P
African	1	2	Af
Regions where teachers work			
Te Tai Tokerau/Northland	4	9	TT
Tāmaki Makaurau/Auckland	17	36	TM
Waikato	1	2	Wk
Te Moana-a-Toitehuatahi/Bay of Plenty	2	4	MT
Te Tai Rāwhiti/Gisborne	0		TR
Te Matau-a-Māui/Hawke's Bay	2	4	MM
Taranaki	1	2	T
Manawatū-Whanganui	3	6	MWh
Te Whanganui-a-Tara/Wellington	8	17	WhT
Whakatū/Nelson	0		Wh
Te Taihū-o-te-waka/Marlborough	0		TW
Whakatū/Nelson	1	2	Wh
Waitaha/Canterbury	5	11	Wt
Ōtākou/Otago	3	6	Ō
Murihiku/Southland	0		Mu
Length of time teaching geography			
1–2 years	2	4	
2–5 years	4	9	
5–10 years	6	13	
10–20 years	19	40	
20 years+	16	34	



discussed mātauranga Māori concepts, pūrākau and kaitiakitanga, were used in Western ways, with pūrākau mentioned most frequently. One teacher highlighted “the value of kōrero [spoken] pūrākau in understanding our connection to place and space, land management, and awareness of natural hazards” (m-PE-TM). Other teachers implied pūrākau through using *myths, legends* or *folklore*. For example, only English words were used by this teacher to describe pūrākau: “The ‘folklore’ type stories that help students understand the scientific” (m-PE-TM). Teachers’ use of myth, legend and folklore suggests confusion between fiction and deliberately constructed narratives that communicate Indigenous knowledge. Similarly, teachers discussed kaitiakitanga, the second-most frequently mentioned mātauranga Māori concept, on its own or together with sustainability. One teacher joined both terms together, writing: “Sustainability and kaitiakitanga of the whenua informed by mana whenua [people who hold the rights associated with land]” (f-PE-WhT). However, sustainability has a different meaning to kaitiakitanga, with sustainability focusing on preserving natural resources rather than guardianship and resource management aligned with group values. Kaitiakitanga was also implied by teachers who referred to sustainability. For example, one teacher explained they used mātauranga Māori to explain the “interaction between natural and cultural environments with a focus on sustainability” (m-PE-MWh), but they used only the English word. The way pūrākau and kaitiakitanga were applied suggests that some teachers may have substituted these terms for Western concepts rather than teaching the mātauranga Māori contained in the concepts. In contrast, one Māori geography teacher cautioned that teachers need to reassess how they communicate mātauranga Māori: “Cut the references to... myth/legends as those words have negative connotations... present Māori perspectives as serious and legitimate ideas/scientific theories” (f-M&PE-Wk). Although some teachers applied Western understandings, it appeared that others valued oral narratives and Indigenous knowledge sources.

#### 4.1.1 | Core Western Geographic Concepts—Place and Space

Several teachers discussed teaching about the central Western geographic concept of place, the geographic term for location. One teacher hoped students would learn to “identify and understand the place around them, and the significance of that place to Indigenous and non-Indigenous people” (m-PE-WhT). Use of place to represent location, particularly school location, aligns with Western geography. Other teachers suggested a more holistic understanding of place aligning with te ao Māori. One teacher desired that decolonised geography would help with “reconnecting students to the places we are in, not just through geology or research, but through understanding mana whenua, the history of the whenua, and the significance of each place to Māori” (f-P-WhT). Teaching about place within te ao Māori could be developed through a holistic understanding of place as wāhi (place, location), a concept not used by teachers.

Only one teacher mentioned the central concept of space, which is how Western geographers understand the distribution of features across the Earth’s surface. The teacher applied a Western understanding of space by highlighting “the value of kōrero

pūrākau in understanding our connection to place and space, land management, and awareness of natural hazards” (m-PE-TM) but did not engage with an ao Māori understanding of space as wā, which includes ancestral, temporal connections. Not using the Māori words wāhi and wā misses opportunities to connect significant mātauranga Māori and geographic concepts.

#### 4.1.2 | Core Māori Concepts—Whakapapa and Atua

A few teachers referred to atua, who are ancestors with ongoing influence, and to whom people and the environment are related through whakapapa. Some teachers connected atua to the environment. For example, one teacher wrote: “Te ao Māori understanding of our land with ngā atua being a vital part... will deliberately reflect Māori context and perspective and values” (f-P-Wh). Another teacher suggested teaching about the origins of te ao Māori by “using local stories about landmarks and the Māori creation story to connect atua and wairua [spirit] with kaitiaki [guardian] practices” (f-OE-TT). The atua Rūaumoko (atua of earthquakes and volcanoes) featured in some teachers’ discussions of volcanism. One teacher commented: “I have some mentions of te ao Māori in my Year 11 course, including looking at Rūaumoko” (m-PE-WhT). However, no one specifically referenced other atua, such as Ranginui (primal atua of the sky) and Papatūānuku (primal earth mother), despite whakapapa connections to te taiao and ngā tāngata. Teachers’ limited discussion of atua and cosmology suggests space for further engagement with mātauranga Māori. It also suggests that some teachers’ understanding of te ao Māori connections to geography was limited to singular words, such as atua names.

#### 4.2 | From General to Specific Mātauranga Māori

The mātauranga Māori utilised was more holistically relevant to all of te ao Māori rather than geography specific. Teachers used some terms and concepts that helped students understand te ao Māori and mātauranga Māori, such as mauri and tikanga (system of correct values and practices); see Table 3. Teachers also used some terms and concepts about Māori societal structures, such as hapū, whanaungatanga (relationship), and mana motuhake (autonomy, self-determination). One teacher explained why they use these terms and concepts: Starting with the Māori worldview is relevant to all of our teaching. Terms such as whakapapa (genealogy), manaakitanga (hospitality), mauri (life force) and kaitiakitanga (guardianship) are all used to affirm our role as environmental custodians while also providing guidance to the way we manage natural resources effectively (f-M&P-TM). Using terms and concepts that help teachers and students to understand te ao Māori is valuable because they provide a foundation upon which to build geography-specific mātauranga Māori. Additionally, regularly using terms and concepts explaining te ao Māori normalises te ao Māori and te reo Māori within the classroom. However, students can learn general terms and concepts in any subject, so it is vital to also use geography-specific terms.

Teachers employed some geography-specific terms and concepts. Geography-specific terms and concepts referred to included maramataka and place names. However, the geographic

TABLE 3 | Types of mātauranga Māori terms and concepts discussed by geography teachers.

Understanding te ao Māori and mātauranga Māori		Understanding Māori society			Related to geography		
Central concepts of Te Ao Māori		Concepts where people relate to people	Self-determination concepts	Concepts for understanding environments	Environmental management tools	Geographic features	
Māori knowledge	Te Ao Māori	Groups of people	Concepts where people relate to people	Self-determination concepts	Concepts for understanding environments	Environmental management tools	Geographic features
Kaupapa Māori	Atua	Hapū	Ako	Kotahitanga	Maramataka	Kaitiakitanga	Maunga
Mātauranga Māori	Cosmology	Iwi	Manaakitanga	Mana motuhake	Place names	Rāhui	Papakāinga
Mātauranga-ā-iwi	Mana	Rūnanga	Pepeha	Mana whenua	Pūrākau		Repo
Pūrākau	Mauri	Tangata	Whakanohonoho	Rangatiratanga	Research		Taonga
Te ao Māori	Reciprocal relationships	Tangata whenua	Whanaungatanga	Tangata whenua	Tohu		Te taiao
Te ao Māori	Spiritual	Whānau	Whare wānanga	Tūrangawaewae	Wā		Whenua
Whakatauki	Tikanga				Wāhi		
	Wairua				Waiata		
	Whakapapa				Whakatauki		

terms and concepts were more applicable to human than physical geography. Some physical geography terms included names of features, such as whenua and repo (swamp), but no physical geography concepts were given. For example, one teacher wrote: “Knowing and valuing the local area as a place conceived of in terms of mātauranga Māori, for example, knowing the salt-marsh as the repo and the significance of our repo for local iwi past and present” (f-P-WhT) but did not connect this to concepts or processes within the repo. Therefore, it appears there is scope for teachers to increase their use of mātauranga Māori geography concepts and apply mātauranga Māori across physical and human geography.

## 5 | Discussion

This section discusses the findings in relation to the extant literature. Participants incorporated various kupu Māori into geography, such as pūrākau, kaitiakitanga and mātauranga-ā-iwi. The existing literature supports this practice, with Stewart (2021) asserting that as an official language of Aotearoa New Zealand, te reo Māori should be used in all classrooms, and Hoskins and Jones (2022) insisting that indigenisation requires tauwiwi (non-Māori) to learn common kupu Māori. Furthermore, Higgins and Rewi (2014) argued that normalising te reo Māori takes commitment across society, which includes teachers, and the teachers’ professional standards require ongoing development of te reo Māori (Education Council New Zealand 2017; Teaching Council of Aotearoa New Zealand 2025). The geography teachers’ array of kupu Māori suggests movement towards indigenisation.

### 5.1 | From Western to Māori Concepts

Some teachers substituted kupu Māori with English words. For example, some teachers interchanged kaitiakitanga and sustainability without connecting kaitiakitanga to te ao Māori or used ‘myths’ instead of pūrākau. Stewart (2017) and Jackson (2016) insist that while translating terms quickly adds te reo Māori to curricula, it maintains Western knowledge’s power instead of teaching mātauranga Māori. Additionally, substituting Māori and English words suggests a form of linguistic racism that sees language as only communicative (May 2023). Moreover, according to Mika (2019), te reo Māori is both the world and a describer of the world. Therefore, Māori words need to be understood within te ao Māori. Substitution for English terms separates kupu Māori from their meaning in te ao Māori. Word substitution in the current study suggests some teachers had more to learn regarding the relationship between te reo Māori and te ao Māori. In addition, application of a knowledge braiding approach (Saha et al. 2024) might support teachers to move from using only Western concepts to teaching more mātauranga Māori concepts.

### 5.2 | From General to Specific Mātauranga Māori

The mātauranga Māori that teachers identified covered general topics, geography-specific topics and geography concepts. It seemed that through teaching mātauranga Māori, teachers met

Hoskins and Jones's (2022) indigenisation goal of basic knowledge. Furthermore, teachers taught subject-specific knowledge, as promoted by Hurt and Wallace (2005), by employing Māori terms for geographic features, such as whenua; concepts for understanding environments, such as maramataka; and tools for managing environments, such as rāhui (temporary restriction on using a place). However, only some of the mātauranga Māori that teachers identified were conceptual. Concepts support students in thinking about the world in new ways and in analysing or explaining it (Taylor 2019; Young et al. 2014). Aotearoa New Zealand secondary school geography places high importance on concepts (Milligan et al. 2015; Taylor 2019). Therefore, integrating mātauranga Māori concepts is central to achieving mana ōrite mō te mātauranga Māori in a subject that prioritises conceptual knowledge.

Teachers mainly discussed teaching mātauranga Māori within human geography topics. In its approach to research and knowledge, school geography assumes a Western paradigm based upon a Cartesian dualism. Cartesian dualism centres people and separates the object of study from the subject, commonly known as separating mind from body and separating culture/cultural from nature/natural (Roberts 2012). Assumptions from Cartesianism may have made it easier for teachers to understand how to bring mātauranga Māori into human geography, which centres people, than physical geography.

The finding that physical geography was less likely to be indigenised may also reflect its recognition as a science. Some teachers may hold an absolutist view of Western science and physical geography knowledge as singular knowledge (Young et al. 2014). This absolute knowledge assumption comes from Cartesian dualism's assumption that Western knowledge is universal, not connected to place or time (Grosfoguel 2012). Teachers may have applied these assumptions by prioritising Western physical geography knowledge in curricula and discounting the relevance of mātauranga Māori because of its difference from Western knowledge. Furthermore, Radcliffe and Radhuber (2020) suggest that alternate knowledge systems may challenge some people's prior learning, understanding of knowledge and core values. In the context of this study, Radcliffe and Radhuber's suggestion may imply that teachers whose prior geography learning prioritised Western knowledge and included little mātauranga Māori may have had their assumptions and prior understandings disrupted and challenged by the call for mana ōrite within geography curricula.

Separating geography into physical and human subdisciplines contrasts with Māori ontology. Māori ontology is holistic and foregrounds the relatedness of all things (Salmond 2012); therefore, a relational Māori understanding of geography would not separate human and physical geography. Some Māori geographers, such as Mokaraka-Harris (Ngāpuhi, Te Rarawa, Ngāti Wai), Thompson-Fawcett (Ngāti Whātua), and Ergler (2018), provide contemporary mātauranga Māori models that connect physical to human geography, which teachers could integrate into curricula. Rather than separating mātauranga Māori into physical and human geography, teachers might consider using groupings of mātauranga Māori suggested by Māori scholars, such as Curtis (2005, as cited in Macfarlane et al. 2019), Mead (2022) or Stewart (2021).

In this study, teachers focused on traditional knowledge, such as pūrākau and cosmology. Māori scholars offer different groupings for mātauranga Māori. Mead (2022) contends that mātauranga Māori is knowledge of the past, present and future. In contrast, Curtis (2005, as cited in Macfarlane et al. 2019) differentiates mātauranga Māori into original knowledge from Hawaiki, traditional knowledge that evolved in Aotearoa New Zealand, and contemporary knowledge. In the current study, there was no discussion of original knowledge, and kaitiakitanga and rāhui were the only contemporary knowledge mentioned. The limited forms of knowledge used suggested some teachers saw mātauranga Māori through an essentialised lens. Similarly, Radcliffe (2022) and Hoskins and Jones (2022) explained essentialism is common among non-Indigenous educators. An alternative would be to see mātauranga Māori as continually evolving (Mead 2013; Muru-Lanning 2012; Royal 2007). Braiding Māori geographers' research into curricula would demonstrate that mātauranga Māori is fluid, developing and contributes to contemporary geographic topics.

Stewart (2021) provided another framework through which mātauranga Māori in curricula can be assessed. This study's participants mentioned all of Stewart's knowledge types, including te reo Māori, values such as whanaungatanga, facts such as maramataka, metaphors like pūrākau, narratives like cosmology, and perspectives. The most common forms in this study were perspectives, which is a common Western geographic analysis approach (Morgan and Lambert 2023), and pūrākau, translated as myths, suggesting teachers' understanding of mātauranga Māori was influenced by Western ontologies and epistemologies. The range of knowledge types suggests that a broad range of mātauranga Māori knowledge types are taught by geography teachers.

## 6 | Conclusion

This study explored how Aotearoa New Zealand geography teachers integrated Māori concepts and mātauranga Māori into their curricula. As secondary school geography also holds important tāngata and whenua, the central concepts of te ao Māori, the geography classroom is ideally placed for bringing about mana ōrite mō te mātauranga Māori. In this research, geography teachers engaged with a broad range of mātauranga Māori that supported indigenisation and the educational priority mana ōrite mō te mātauranga Māori. Key themes identified in the research show that some teachers had difficulty moving from teaching Western geographic concepts to teaching Māori concepts and teaching a range of specific mātauranga Māori. Much of the mātauranga Māori that teachers identified were words rather than geographic concepts. Furthermore, some geography teachers understood mātauranga Māori in Western ways and only brought mātauranga Māori into human geography or only applied traditional mātauranga Māori. These teachers' applications of mātauranga Māori suggest they may have been influenced by Western beliefs about the primacy of Western knowledge. To address this, teachers could develop their geography curricula by engaging with contemporary mātauranga Māori and braiding mātauranga Māori and Western knowledge and human and physical geography. Bringing about mana ōrite mō te mātauranga Māori in concepts and physical geography and connecting

to central te ao Māori concepts of wā, wāhi and atua also offer directions for curricula development. With an ongoing commitment to learning more about mātauranga Māori, te reo Māori and te ao Māori, geography teachers could extend the application of mātauranga Māori concepts, shaping a more inclusive and responsive secondary school geography curriculum that works towards achieving mana ōrite mō te mātauranga Māori.

A potential limitation of this study was the use of self-reported questionnaire data (Gillham 2007), but the benefits of online questionnaires, especially for participants, outweigh the limitations. Given the exploratory nature of this study, the online questionnaire provided an overview of teachers' understandings and suggested directions for further investigation with teachers and in their classrooms (Finn 2025). Future research studies could use participatory approaches to investigate how geography teachers apply Māori concepts in classroom and field work settings, explore how students learn mātauranga Māori within geography and how initial teacher education programmes build the capacity of future geography teachers to engage with mātauranga Māori. Ongoing decolonisation and indigenisation of Aotearoa New Zealand secondary school geography is imperative because all things Māori belong in our curriculum.

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### Ethics Statement

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### Data Availability Statement

Research data are not shared.

### Endnotes

<sup>1</sup> Citations by Māori and Indigenous scholars follow Māori tikanga by placing emphasis on whakapapa which serves as the core framework for locating, organising, storing, and transmitting knowledge. Therefore, iwi and kinship affiliations of Māori and Indigenous scholars are included when first cited. To include the kinship affiliations in citations with three or more authors, all scholars are named when a source is first cited. No kinship affiliations are given for authors who do not self-identify as Māori or Indigenous.

<sup>2</sup> Participant codes indicate gender—ethnicity—region; see Table 1.

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