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ARTICLE

Māori (Flexible) Learning Spaces, Old and New

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Abstract

Māori aspirations in education have not been served by past national policies. It is hard to extinguish the influence of monoculturalism, whereby schools were used to colonise Māori by enforcing linguistic and cultural assimilation. The history of debate on Innovative Learning Environments (ILE) and Flexible Learning Spaces (FLS) demonstrates the ongoing dominance of this Eurocentric, monocultural approach. Official New Zealand education policy and practice follows international trends in school design, moving away from traditional single-cell classrooms towards more open and inter-connected spaces, despite no real evidence concerning the relative effects on learning of each classroom type. Meanwhile, school marae have been around for several decades, but largely ignored in national ILE and FLS policy and research literature. Our experiences lead us to suggest that Māori identity must be 'built in' not 'added on' to monocultural ILE frameworks, and for this reason, spatiality is crucial in Māori teaching and learning spaces. This article explores the notion of 'Māori learning spaces.'

Keywords Aotearoa New Zealand · Decolonising education · Flexible learning spaces · Kaupapa Māori · Māori learning spaces (ngā wāhi ako) · School marae (marae-ā-kura)

Introduction

Māori medium schooling has developed and diversified over the last four decades and today has several sub-categories: Kura Kaupapa Māori, Kura-a-Iwi, Bilingual programmes, etc. Māori medium schooling has influenced the whole school sector of the country of Aotearoa New Zealand. Graduates from Māori medium schools have punched above their weight and made the whole country sit up and take notice (for example, see NZ Onscreen, 2024).

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During the same time period, the way schools are designed and built has undergone enormous changes. We are in what we might call the 'post-FLS' era, insofar as FLS (flexible learning spaces) have replaced older models of classrooms and become the new normal. Reflecting this normalisation, information about ILE (innovative learning environments) and FLS is no longer as prominent on the Ministry of Education website as five years ago.

Yet despite the widespread acceptance of ILE and FLS in school design, there has been little official attention given to whether and how ILE and FLS can best serve Māori education, with only a handful of articles published to date concerning particular Māori school settings (discussed below), and one recent review (Mane et al., 2023). This article brings in literature on relevant questions, such as Māori spaces in tertiary institutions, school-based marae, and spatiality in education, to begin to address the more general question of how FLS and ILE can benefit Māori aspirations in schooling.

School systems and practices of administration and curriculum management have become increasingly digitalised in recent decades. Gradually, the industrial-age trappings of traditional schools are being replaced by built environments and school facilities that are more responsive to the need for flexibility. Changes in the design of school buildings have privileged technological change and reformist education trends focusing on preparation for the global 'knowledge economy' (Gilbert, 2005; Wells et al., 2018). Facilities design, coupled with innovative approaches to teaching and learning, have given rise to the innovative spatialisation of classrooms and schools (Biesta, 2019).

In this article, the application of these principles of flexibility and innovation to overall school building designs, including connector spaces and outdoor surroundings, will be termed Innovative Learning Environments (ILE). Specific, finite spaces of teaching and learning (the new 'classrooms') will be termed Flexible Learning Spaces (FLS). Recent research concludes that more Kaupapa Māori and Māori-led research is needed on all aspects of ILE and FLS (Mane et al., 2023).

An ILE is defined by the OECD Centre for Educational Research and Innovation (CERI) as "an organic, holistic concept—an eco-system that includes the activity and the outcomes of the learning" (OECD, 2013, p. 11). This definition goes beyond the walls of the building; the 'place' of learning includes its setting and external spaces, connections with other buildings on the site, and with the local community (Dumont & Istance, 2010).

FLS are open, flexible spaces, in contrast with the tight-fit design of traditional cellular classrooms. FLS are technology-rich, open-plan spaces, allowing visual connections and flexible configurations, and enabling teachers and students to work in different ways, including collaboratively. Some parents have protested against these larger classrooms, saying their children are worse off, but there is no conclusive evidence of any relative effect of the two classroom types on learning. Sociocultural pedagogies posit that learning and knowledge are constructed in a social context (Vygotsky, 1978), and FLS allow for a richer learning space, in which students can work in a variety of ways. FLS break with uni-directional teacher control and management of learning, and better integrate digital and electronic tools.

First, rehearsing the international history of FLS and ILE is useful to better understand how the current situation has arisen.

Policy History of ILE and FLS

The conceptual model of 'open education' has a long history, and includes ideas such as "team-teaching and schools without walls" (Noddings & Enright, 1983, p. 183), although its popularity in practice has been compared to the "swings of the pendulum" (p. 182). Bell's monitorial system of the late eighteenth century, in which abler students or 'monitors' assisted the teacher, is considered an early antecedent of team teaching and open plan learning (Hamilton, 1977). In the 1900s, such 'innovations' were replaced by the steady development of 'traditional' school buildings, housing discrete one-teacher classrooms coming off corridors (hence the 'egg and crate' metaphor). This settled picture saw occasional variations. For example, in post-war Britain, pressed by increasing school rolls due to rising birth-rates and school-leaving ages, the Ministry of Education presented architects with a brief that sounds remarkably familiar in 2024:

> schools need more useful floor area… more individual spaces… of many different sizes and shapes… Some of the spaces will be quiet and clean, others noisy and dirty. These spaces must be adaptable not only to [the] present variety of uses, but also to the changes which the future is bound to bring. (Morrell & Pott, 1960, cited in Hamilton, 1977, p. 34)

The 1960s saw the development of schools considered to be more child-centred than the earlier model of traditional Victorian-style school buildings (Donnelly & Trommler, 2020). Leading progressive architectural trends in school buildings aimed for flexible, connected designs that would support evolving pedagogy. This evolution towards progressive styles of teaching and learning was significantly aided by the well-known 1966 Plowden Report, commissioned in 1963 by the English Central Advisory Council for Education. The commission was motivated by a liberal belief in child-centred, discovery learning (Gillard, 2002). The design of London's Eveline Lowe primary school in 1963, undertaken in tandem with the work of the Plowden Committee, featured flexibility, connectivity, and external-internal flow. Its pedagogy was influenced by the view that all learning was founded in interest, thus there should be purpose evident in all that the children undertook.

Antecedents of open education are found in the works of foundational thinkers in education including Dewey, Montessori and Piaget, the latter said to be influential in the thinking of the Plowden Committee. These developments in Britain were also influential in the USA (Rathbone, 1972). The foray into 'open education' was derailed, in Britain, by the desire of politicians not to leave important curriculum decision-making up to teachers, as was signalled in a significant 1976 address delivered by Jim Callaghan (then-Prime Minister) in Ruskin College, Oxford University, indicating that political leaders would no longer stand by for educators to develop curriculum and pedagogy. This change in control over education was entrenched by the Thatcher government, weakening the influence of teachers over curriculum and

teaching spaces, and spearheading a return to top-down approaches to school curriculum, pedagogy and architecture.

The so-called 'spatial turn' in education was boosted in the UK by the ambitious Building Schools for the Future (BSF) programme, launched in 2003 (OECD, 2023). This programme was designed to replace outdated school facilities, considered unfit for preparing students for the twenty-first century (Mahony & Hextall, 2013). Contemporaneously, the Hellerup School was built in 2001 in Copenhagen, Denmark. In 2007 in Portugal, the Secondary Schools Modernisation Programme (SSMP) provided for physical facilities that could positively improve education practice (Veloso et al., 2014). In Australia, the Rudd government launched the Building the Education Revolution (BER) initiative in 2009 (Lewis et al., 2014). These summaries show that school design is a global issue.

Development of ILE and FLS in New Zealand

In 2008 in Aotearoa New Zealand, the Ministry of Education completed a 'learning studio' pilot project (Ministry of Education, 2012), signalling an interest in novel school building designs (Ministry of Education, 2021), and eventually giving rise to a significant national programme of school building development. The Ministry of Education was influenced by the OECD Innovative Learning Environments research. Leading up to 2017, the Ministry of Education adopted and advocated for the OECD's holistic view of innovative learning environments as an ecosystem (Benade, 2017). Following the earlier examples of the 'open education' movement, initially the Ministry claimed a link between building fabric and student achievement (Ministry of Education, 2016).

Since 2017, the terms 'Modern Learning Environments' (MLE), ILE and FLS have largely disappeared from national policy texts, replaced by the use of 'Quality Learning Environments' (QLE), and 'wellbeing' (Ministry of Education, 2020). Despite the changing terms, the Ministry of Education continues to recognise a relationship between classroom design and teaching styles, claiming an important role for physical design in securing student success and wellbeing. Two recent collections showcase the range of ILE and FLS research and practice around the country (Trask & Khoo, 2021; Wright & Khoo, 2021). But with the change of government in late 2023, it is reasonable to assume that support for ILE and FLS will continue to fall in national policy.

School-Based Marae

Marae-ā-kura (school-based marae) have been part of the educational landscape in Aotearoa New Zealand for 40 years (Lee, 2012a). Often the marae is the only place in a secondary school where being Māori feels normal; students described their school marae as a 'safe haven' where they are 'not afraid to be Māori' (Lee-Morgan, 2016, p. 71). School marae have been a site of Māori political activism in urban schools and local communities. With heroic efforts, Māori teachers and school communities have overcome mainstream opposition and lack of support to establish

school marae (Smith, 1993). For example, Linda Tuhiwai Smith (1993) recounts the struggle by Māori women teachers, herself included, to develop a marae at a school where she taught in the 1980s.

What little research has been completed on school marae has shown their effectiveness in enabling Māori student success 'as Māori' (Smith, 2012). Jenny Lee (2012a) outlines how her TLRI-funded research 'morphed' from an initial focus on how school marae support cultural responsiveness, to end up being about how marae-ā-kura 'make space' for Māori identity inside mainstream secondary schools (Lee, 2012b). When a school has no marae, the Māori room or department often operates as that 'Māori space' and shelter for the entry of te ao Māori, albeit in limited or adapted versions (Penetito, 2010b). School marae demonstrate the cultural importance of spatiality and its links to pedagogy (Coleman & Luton, 2021), to which discussion returns in the following sections.

To sum up, the idea has become widespread that school building design influences pedagogy and can facilitate improved outcomes of education, according to the concept of 21st-century learning. Much of the ILE and FLS research concentrates on tangible building elements, rather than on teaching and learning (Blackmore et al., 2011) or the complex social practices of learning environments (Woolner et al., 2018). But researchers have argued for less emphasis on design, and more on pedagogies, such as collaborative learning and the development of an innovative school culture. Many commentators have highlighted complex links between material space and pedagogy, shifting the field away from its universalist roots, towards allowing for culture in learning spaces theory and practice (Charteris & Smardon, 2018; Charteris et al., 2017; Tondeur et al., 2017). The next section considers these links in more detail.

Space, Culture, and School Design

Ministry of Education policies for new school buildings and possible links to pedagogy and learning have been mainly 'apolitical'—reflecting dominant cultural 'mainstream' views, they have ignored the bicultural and multicultural nature of Aotearoa New Zealand education and society. There is one relevant Ministry policy document, entitled *Māui whakakau, kura whakakau: the impact of physical design on Māori and Pasifika student outcomes* (Ministry of Education, 2016). Despite its auspicious title, this report omits any mention of school-based marae, or Kaupapa Māori principles in education. Its discussion is limited to how ILE and FLS might support cultural responsiveness. Apparently seeing space as 'inert' this document extols the simplistic idea of design as creating "a culturally nurturing backdrop against which schools can form positive relationships with Māori and Pasifika students, whānau and community, and effectively implement culturally responsive teaching pedagogies" (Ministry of Education, 2016, p. 31). The implicit positioning exemplified by this quote, in which "we" are educators and "they" are Māori and Pasifika students and their communities, reflects the lack of Māori/Indigenous-centred research in the literature relevant to this topic, as also noted by Jo Mane and co-authors (Mane et al., 2023). Two chapters from Māori schools appear in the

above-noted collection of case studies from Aotearoa New Zealand (Herewini et al., 2021; Nelson & Rehu, 2021), though neither makes explicit links to the research on marae-ā-kura.

ILE and FLS: School Design for a Changing World

The development of ILE schools and retrofitting FLS in pre-existing schools is heralded as breaking with the industrialised model of traditional schools, which in turn have been associated with teacher-centred classroom practice, hierarchical knowledge transmission and little student agency (Arnesen et al., 2020; Charteris et al., 2021; McPherson & Saltmarsh, 2017). Policy discourses supporting ILE and FLS in schools have been knitted together with notions of future-focused learning and flexibility, the promotion of collaboration and creativity, and emphasis on student agency (Campbell, 2020).

The CERI (OECD) principles of learning acknowledge that pedagogy has evolved. One factor in this change has been pressure placed on schools to teach skills and dispositions such as "flexibility, creativity, problem-solving, innovation [and] collaboration" (Loveless & Williamson, 2013, p. 40). Policymakers have adopted the idea that design physical space can enable and support these pedagogical changes (Benade, 2021; Wells, 2018). Thus education policy is used to prepare young people for the knowledge economy (Martin, 2006; McPherson & Saltmarsh, 2017; Mulcahy & Morrison, 2017).

Schools designed in keeping with the ILE concept intentionally de-centre the traditional 'front of room' teacher. Instead of the traditional 'egg and crate' school buildings made up of rectangular, single-cell rooms coming off a corridor, ILE school designs feature open-plan concourses. Within these concourses, internal hubs, break-out spaces and other adjacent spaces make a wider variety of teaching and learning modes possible, including having multiple teachers working with large groups (Fisher, 2005; Nair, 2014; Universities & Colleges Information Systems Association, 2019). More detailed descriptions of ILE and FLS, including photographs and diagrams, can be found at the following links:

https://inclusive.tki.org.nz/guides/planning-innovative-learning-environments-iles/

https://nzareblog.wordpress.com/2017/06/29/flexible-learning-spaces/

https://hail.to/te-ao-marama-school/article/bKnbaFm

ILEs promote the principle that collaborative learning and personalised, individual learning can co-exist in one teaching space (Dovey & Fisher, 2014). School designers in New Zealand have been enthusiastic learners about inquiry-based, student-directed, and collaborative approaches to learning. Such professional learning supports architects to develop designs that enable and facilitate modern teacher practice (Benade, 2019; Minero, 2018; Wells, 2018).

Designers may intentionally suggest to the occupants of the resulting built environment how to use the space—'built pedagogy' (Monahan, 2002)—indicating that designers may regard a school building as able to educate more generally, outside the teacher-student interaction. Educational facilities also implicitly communicate

cultural messages (Veloso et al., 2014), thus enhancing their value to a community. From a design perspective, the built learning environment can support student motivation and well-being, teacher satisfaction and contribute to creating a positive school culture (Moore & Lackney, 1993; Nair et al., 2013). These attributes can help members of a school community feel they are safe, valued and respected in their school, implicitly supporting positive community development (Tanner, 2009).

Design devices such as visual vertical and horizontal transparency create a sense of connectivity. By seeing others at work and play, users of an ILE attain a sense of belonging to a larger whole. Simultaneously, these less clearly-defined spaces reduce the traditional barriers between academic and non-academic activity. Wide staircases, plaza-style and large social spaces create opportunities for circulation and gathering. The addition of attractive outdoor settings can contribute to reducing stress and increasing motivation, simultaneously aiding positive behaviour.

These positive sentiments regarding the contribution of design are from the perspective of designers themselves, but this perspective may be the self-serving position taken up by the design firm competing for contracts. The design contractor is necessarily committed to the contracting bill-payer (such as the Ministry of Education) rather than the school and community. This does not mean that designers are insincere in their belief that innovative progress and pedagogical change can be enabled by design, but this overt role of architects has, however, evaded critical scrutiny in recent learning environments research—indeed, the architectural perspective is minimally reported on in scholarly literature, even when design is the focus (examples include Barrett et al., 2019; French et al., 2020; Pearlman, 2010), though there is some interest in contrasting the 'languages' of educators and architects (Newton, 2009; Wright et al., 2021a, 2021b; Young et al., 2020).

The important question arises about whether ILE and FLS enhance or contribute to student learning. This question remains largely unanswered, researchers in this field bemoaning the paucity of compelling research evidence that highlights benefits for students (Byers, 2016; Imms, 2016). Some research has shown that FLS can positively support changes in teacher and student approaches. Other researchers query the open design of typical ILE space: auditory research, for example, signals the problem of auditory overload (Mealings, 2021; Mealings et al., 2015), and the inability of children to hear what teachers are saying. Other studies reveal that teachers struggle to cope with multiple groupings of students, engaged in multiple tasks in undefined spaces (Chapman et al., 2014), suggesting chaotic learning conditions. But policymakers and designers continue to promote ILE design as a change agent. The ongoing commitment of public funds to building ILE, despite lack of compelling evidence of their educational benefits, betrays the non-neutral nature of the links between design, pedagogy and learning.

Space and Spatiality in Education

Traditions of geography—the discipline in which 'space' is a central concept—posit space as a natural phenomenon that exists independently of human thought and action (Smith, 1990). The concept of 'geopolitics' emerged in the twentieth

century to theorise international political struggles over the control of geographical entities (Flint, 2021). Analogously, within schools 'the classroom' is a pervasive and taken-for-granted space and presence in teachers' lives; educational researchers have tended to overlook the active inclusion of classroom space in their studies. To theorise spatiality, or how we think about space, has been largely absent from New Zealand traditions of educational theory and research (but see Middleton, 2014).

Lefebvre (1991) reconceptualised the relationship between the social and the spatial, recognising that space is not simply a 'square' or stage upon which humans act. The forms taken by spatial organisation contribute to the preservation and perpetuation of dominant systems of social relations. "Spatial structures and relations are the concrete manifestations of social structures and relations" (Soja, 1989, p. 127). Accordingly, disciplines including geography and education are not neutral, but reflect uneven development, which brings with it related spatial inequalities (McGregor, 2004). Recognising this unevenness is a first step in theorising spatial justice (Soja, 2010). Spatial conceptualisation, formation, and organisation contribute to maintaining the status quo; space and justice in education, therefore, must be regarded as in tension (Stewart & Benade, 2020). Spatiality is relevant in considering classrooms, schools and learning environments, yet spatial theorising in educational contexts remains limited and under-developed (Benade, 2022).

The current policy of building flexible learning spaces (FLS) in schools provides renewed motivation to re-think 'space' and its taken-for-granted nature in education. The recent popularity of ILE and FLS has been described as a 'spatial turn' but the practical impact of new school building types has not been matched by concomitant advances in theorising of the link between educational space and pedagogy. Furthermore, following the Covid-19 pandemic, there is increased urgency to develop and understand 'digital spaces' of teaching and learning (Lamb et al., 2022).

The contemporary concept of a 'learning environment' extends beyond the physical teaching space, becoming increasingly fluid under post-digital conditions. While these considerations imply a shift away from procedural or performative analyses, the notion of 'learning' continues to be a key political construct: a desirable process with desirable outcomes. 'Learning' necessarily presupposes 'teaching' and a curriculum on which to focus the teaching and learning process (Biesta, 2014). Even when the 'space' of learning is conceptualised as a phenomenon occurring beyond the walls of a physical, built environment, it persists in space–time as an opportunity for human interaction.

To this end, socio-material and spatial theories draw attention to what lies beyond the simple assemblage of building fabric, furnishings, technology and various elements of state or school policy. The distinction between space and social practice is blurred (Rautio, 2014), and space is in reciprocal relationship with those that use it. These complex and nuanced considerations go beyond reductive analyses of teaching and learning. Lefebvre's (1991) socio-material analyses of space recognised that social relations are affected by space. Soja (2010) highlighted the discrepancies that arise from differential spatial arrangements—such as the digital divide highlighted by experiences during the pandemic (Boys, 2022; Sylvester et al., 2017).

There is a disconnection between the policy rhetoric of ILE and FLS and the unequal realities of schooling, in terms of access to spatial, material and digital

resources including buildings, digital devices, internet access and the myriad material essentials for daily living. This wealth-based disjunction is easily seen in the current state of learning environments research in Aotearoa New Zealand, most of which, as described prior, remains apolitical in its 'neutral' positioning. The concept of bicultural education as a form of social justice can be combined with the concept of spatial justice in a novel concept of 'spatial biculturalism' in education thinking, tailored to Aotearoa New Zealand (Stewart & Benade, 2020). ILE and FLS provide an opportunity to shift educational practice towards biculturalism that warrants being included in planning school building projects.

Māori Learning Spaces: A Curriculum Intervention

Space, as in the use of space, and spatial relationships between people, places and objects, is crucial in central Māori concepts, such as tapu and noa (Mitchell & Olsen-Reeder, 2021). How this works is seen in cultural practices such as pōwhiri, where spatial relationships are under the direction of those concepts. The spatialised nature of school life, where specified rules and norms of speech and behaviour are imposed in certain situations and places, means space is important to consider in Māori schooling (Penetito, 2010a).

What makes a space 'Māori' can vary widely, but will usually include visual cultural symbols such as carvings and other iconography, suitability for rituals of encounter, and provision for catering, childcare, and sleeping. The name 'Māori learning spaces' intentionally implies that a Māori learning space, like a marae, is inherently flexible, so does not need to be named as such. Hence the word 'flexible' is placed in brackets in the title of this article. The concept of a 'Māori learning space' can be considered a culturally-specific FLS (following Lee-Morgan, 2016), and a radical reconstruction of pedagogical space. As with any research involving Māori in education, researchers investigating 'Māori learning spaces' are (or ought to be) ethically and politically motivated to centre, and act in, the interests of Māori people, language, society and culture.

The significance of Māori spaces in teaching and learning has been discussed in research more extensively in relation to university and tertiary settings, where similar issues of Māori students feeling alienated and disempowered are found as in schools (Penetito, 2010b). In the 1970s and 1980s, marae were established in the teachers' colleges (as they were then known) "so that teaching could occur based on Māori pedagogy, including delivering knowledge from a culturally specific environment" (Ka'ai, 2008, p. 193). Teaching in a wharenui was found to enhance students' learning of Māori material and lead to transformative education (Napan et al., 2020).

At Otago University a multi-purpose complex for Te Tumu School of Māori, Pacific and Indigenous Studies was developed as a "marae equivalent" (Ka'ai, 2008, p. 201). Although it was not in the form of a traditional marae, that 'space' was a bastion for Māori identity within the university. Ka'ai (2008) repeatedly places the word 'space' in inverted commas to emphasise its importance. The 'space' was seen as important in validating Māori knowledge and worldviews, and as a symbolic cultural pedagogical tool and teaching aid.

Including Māori language and knowledge in schooling has been going on since the start of Western schooling in Aotearoa New Zealand (Jones & Jenkins, 2011). The first European schools in Aotearoa were mission schools, designed to support the work of the missionaries by teaching Māori to read and write in their own language, which had recently been transformed by the addition of a written genre (Simon & Smith, 2001). In the last few decades, national provision for Māori language and knowledge has focused on curriculum development, which has been a site of extended experimental policy (Meaney et al., 2012; Stewart et al., 2017). Much has been expected of the curriculum, which has run ahead of school practice and realities (Stewart, 2021). School curriculum is an important political debate in Aotearoa New Zealand, as in all modern Western countries, given its symbolic cultural weight (Abbiss, 2014). In its wider meaning, the school curriculum consists of everything the student experiences at school (Pinar, 2012). To consider Māori learning spaces as a form of curriculum intervention shifts thinking about ways of including Māori language and knowledge in schools. To see the teaching space as part of the curriculum connects with visual pedagogy; with the attention to opening up 'lines of sight' in ILE buildings; and with the power of the image in the post-digital age of education (Jandrić & Lacković, 2018).

According to Jenny Lee-Morgan (2016), a marae-ā-kura, as the Māori space in a mainstream school, becomes the location where Māori activities occur; where students get a "culturally-specific and qualitatively different experience" (p. 72) compared to the rest of the school. An important point made by Lee-Morgan is that the same Māori political aspirations behind Kaupapa Māori schooling are also shared by Māori whānau in mainstream schools. Lee-Morgan's research showcases the benefits for Māori students of having a marae-ā-kura, a school-based marae. But a school marae should never be confused for a traditional iwi marae. This insight connects with a notion of a 'Māori learning space' that is a 'marae equivalent' but not necessarily set up as a marae. Lee-Morgan concludes that marae-ā-kura are decolonising spaces with "political intent, pedagogical purpose and transformative potential" (p. 76). The question this raises is: Can Māori learning spaces more generally act in the same educationally significant way?

All the extant literature on Māori FLS consists of studies focused on one kura/school community. We are working at a more general level to posit the concept or category of 'wāhi ako' for a Māori FLS—here 'Māori' is necessarily flexible, so 'flexible' becomes redundant. Hence the English name for the concept is **Māori learning space**, which is short for **Kaupapa Māori learning space**, underlining the importance of the Kaupapa Māori principles in practice. The concept of wāhi ako recognises the visual and spatial as elements of curriculum and pedagogy. Everywhere in a wāhi ako one sees the Māori-led nature of the learning space.

An outstanding example of a school demonstrating the 'wāhi ako' idea (though not using that specific term) is shown in a study based at Richmond School (Nelson & Rehu, 2021), a small primary (elementary) school in a "lower socio-economic neighbourhood" of Napier (Wikipedia, 2023). Napier is a coastal city on the lower East coast of the North Island, located in the rohe of Ngāti Kahungunu. With over half the roll being Māori students, at the time of the research, the school also had a Māori principal and a significant number of Māori staff and board members. The

approach taken is described as 'appropriating' the ideas of ILE/FLS to serve the interests of Māori students. "Space was used as an element of curriculum" (p. 306) whereby the whole school was envisaged as one ILE, with "three inter-connecting learning pods unified by the existing school whakataukī" (Nelson & Rehu, 2021, p. 296).

> Embedding important cultural reference points within the spatial design of the learning pods through the activity zones meant that the spaces 'taught' in a pedagogical sense. The school's whakataukī created a coherent educational narrative for students and their whānau (Nelson & Rehu, 2021, p. 303).

Over several years, the school continued to develop their ILE/FLS through collaborative partnerships between teachers and community members, linking physical and pedagogical design to te ao Māori to support their students' success 'as Māori' (Nelson & Rehu, 2021, p. 291). Albeit in a different context, Richmond School's Māori-led wāhi ako development agreed with the earlier marae-ā-kura research that 'space' plays an important role in decolonising school experiences for Māori students. Transforming education to break the shackles of monoculturalism requires changes that open space for te ao Māori to enter into school curriculum, school design, and school culture, all working together.

Conclusion

A Māori perspective on ILE and FLS looks outwards to national and international theory and practice, while staying grounded in Māori identity, aware that 'Māori' cannot be added like a filter over mainstream ILE and FLS policy frameworks. Nor does 'Māori identity' serve as a useful category for data collection and analysis in schools; rather, Māori identity must be built in to education, from the ground up. To re-think Māori learning spaces as a form of curriculum intervention opens up new directions for thinking about how to include Māori language and knowledge in schools. To see the learning space as an important element of the curriculum looks to visual pedagogy, and the power of the image in the post-digital era. The past successes of school marae point towards the future potential of spatial approaches in working towards achieving Māori aspirations in education. The concept of 'wāhi ako' as Kaupapa Māori learning spaces has radical potential as a curriculum intervention that brings together post-digital technology and cultural tradition in Kaupapa Māori education.

ϖ words

As used in this article

Aotearoa	A Māori name for New Zealand
iwi	tribal kingroup

Kaupapa Māori	Māori approach
Māori	Indigenous peoples of Aotearoa
marae	traditional Māori community centre
marae-ā-kura	school-based marae
pōwhiri	welcoming ceremony
noa	unrestricted, free of tapu
rohe	district
tapu	restricted (in the presence of the gods)
te ao Māori	the Māori world
whakataukī	proverbial saying
wharenui	meeting house

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Declarations

Conflict of interest No issues to report.

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